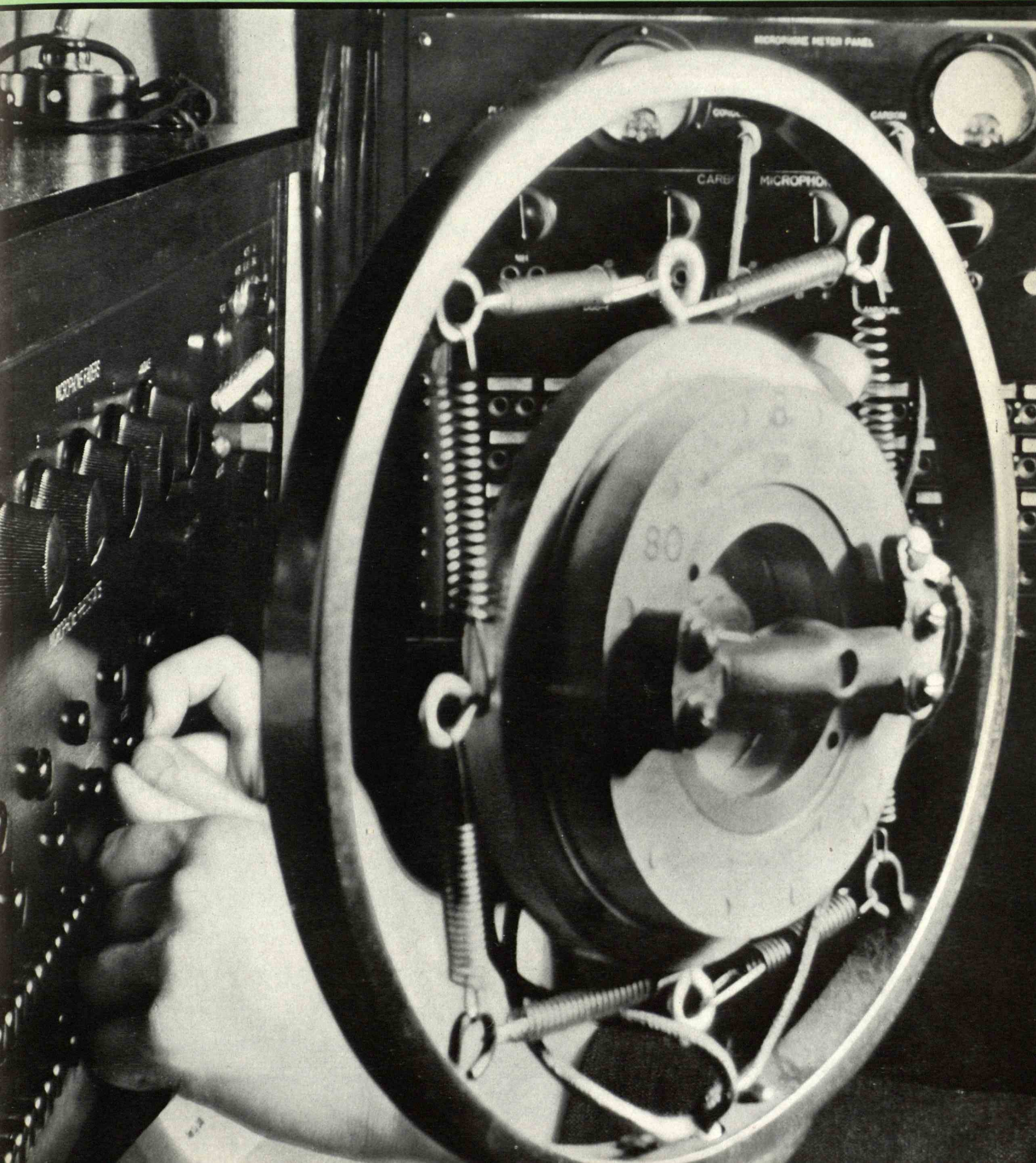


*March 1932*

# TECHNOLOGY REVIEW

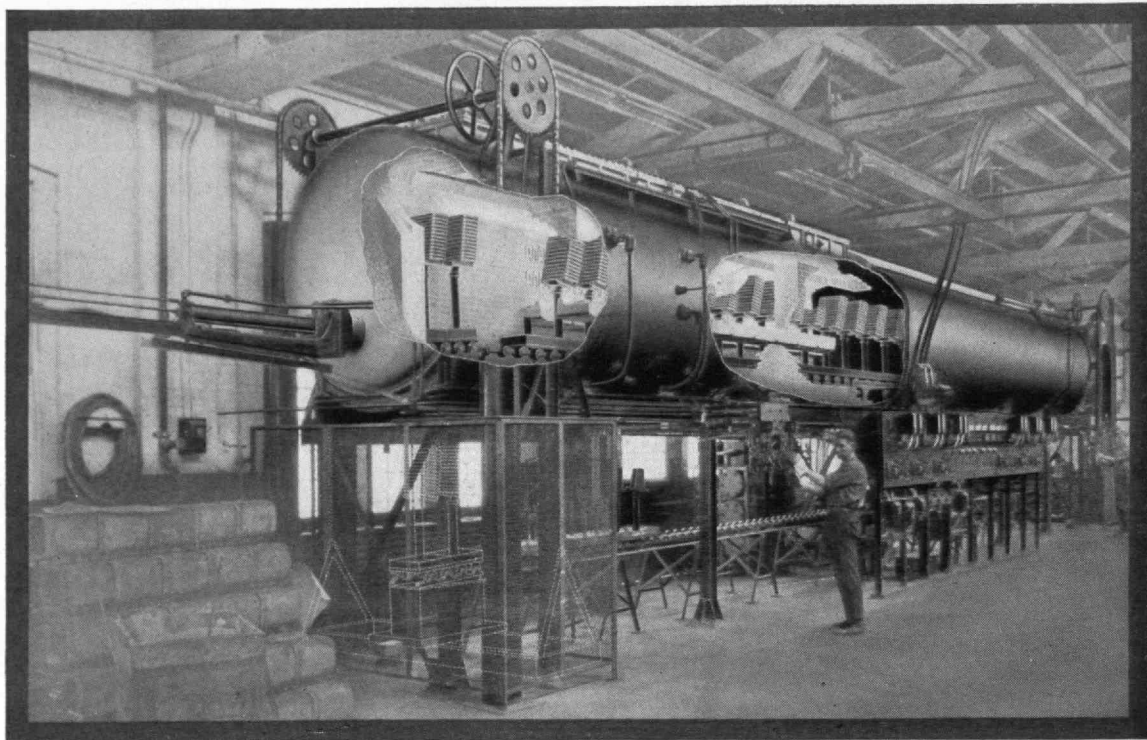


# technology review

Published by MIT

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## SEALING STEEL WITH FLUID COPPER

WITH copper melted to the consistency of kerosene in an electric furnace, steel can be sealed so as to be gas-tight. Like bones, the grains of steel tend to grow together slowly, but electric heat speeds up the process so that steel joints require but a few minutes to knit. And steel joints knit in a copper-brazing furnace are exceptionally neat, strong, and tight.

As a controlled atmosphere at very high temperature must be used, the electric furnace is important to the process. At brazing temperature, the molten copper wets the clean steel and flows into the

finest crevices, forming a copper-steel alloy which seals the joint. The greater the pressure at the joint, the readier the flow of copper.

Such furnaces are used in the manufacture of G-E refrigerators, where hundreds of evaporators are hermetically sealed daily.

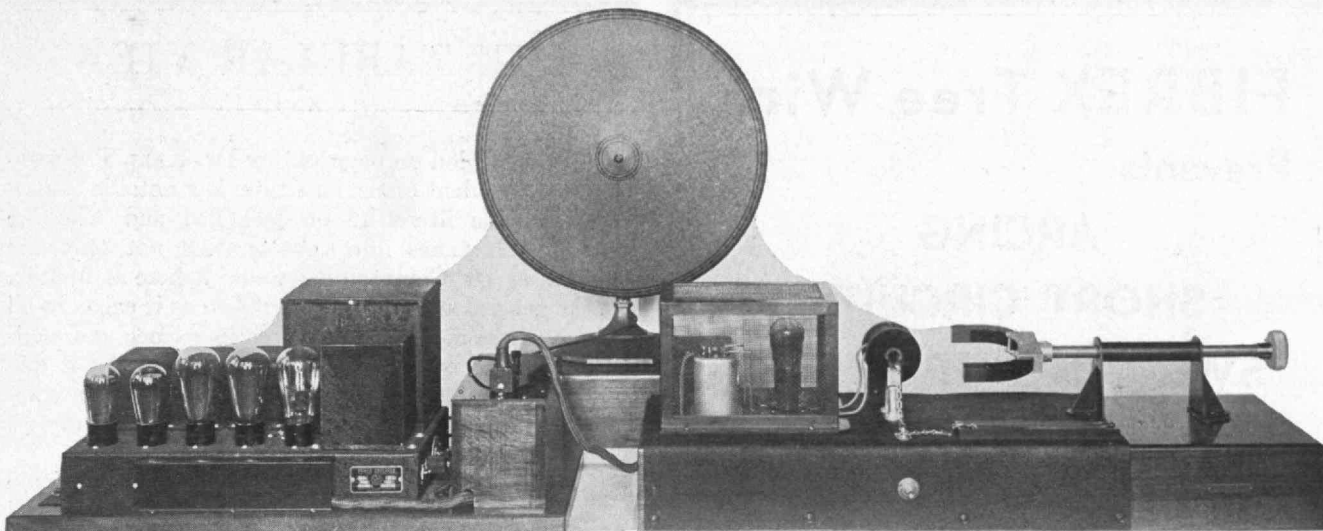
These developments in industrial heating are largely the achievements of college-trained General Electric engineers. Newly graduated young men obtain in the Testing Department practical experience which fits them for future positions of responsibility.

95-924DH

# GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

THE TECHNOLOGY REVIEW, March, 1932. Vol. XXXIV, No. 6. Published monthly from October to May inclusive and in July at 10 Ferry Street, Concord, N. H. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription \$3.50; Canadian and Foreign subscription \$4.00. Entered as second-class matter at the Post Office at Concord, N. H., under the Act of March 3, 1879.



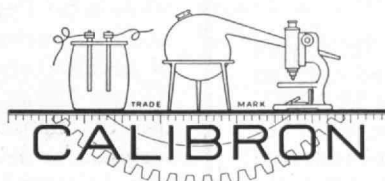
Permitting the public to hear the squirming of molecules! This "Barkhausen Effect" Model is one of a series made for the New York Museum of Science and Industry. It gives experimental support to one theory of magnetism. As displayed, the amplifier at the left of the picture is mounted behind the scenes. Two other models of this series are shown below

# TECHNICAL MODELS OF DISTINCTION

WHATEVER your business may be, you can use models to advantage. At one time you may desire to test out a process in a small way before making a large investment; at another, you may want a striking exhibit for a trade show. Frequently models prove to be of great value in connection with litigation, and their educational worth is generally recognized.

THE New York Museum of Science and Industry, 220 East 42nd Street, New York City, is opening a new section dealing with magnetic and electrical phenomena. We urge

you to visit this exhibition — (which contains more than 20 of our working models) — as we are confident it will prove interesting to you.



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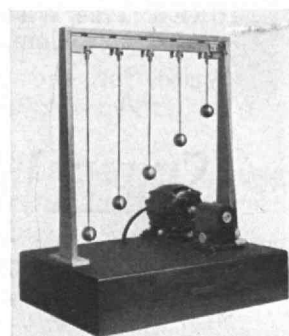


Demonstrating the square law of heat produced by an electric current

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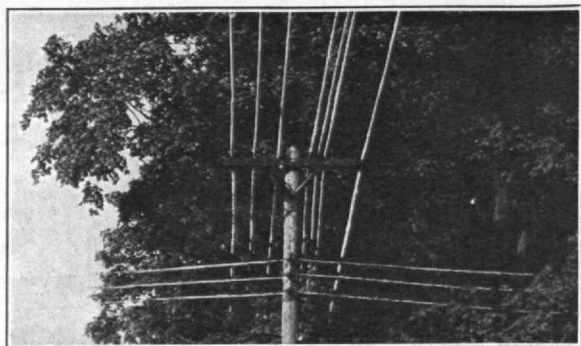
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SWINGING GROUNDS



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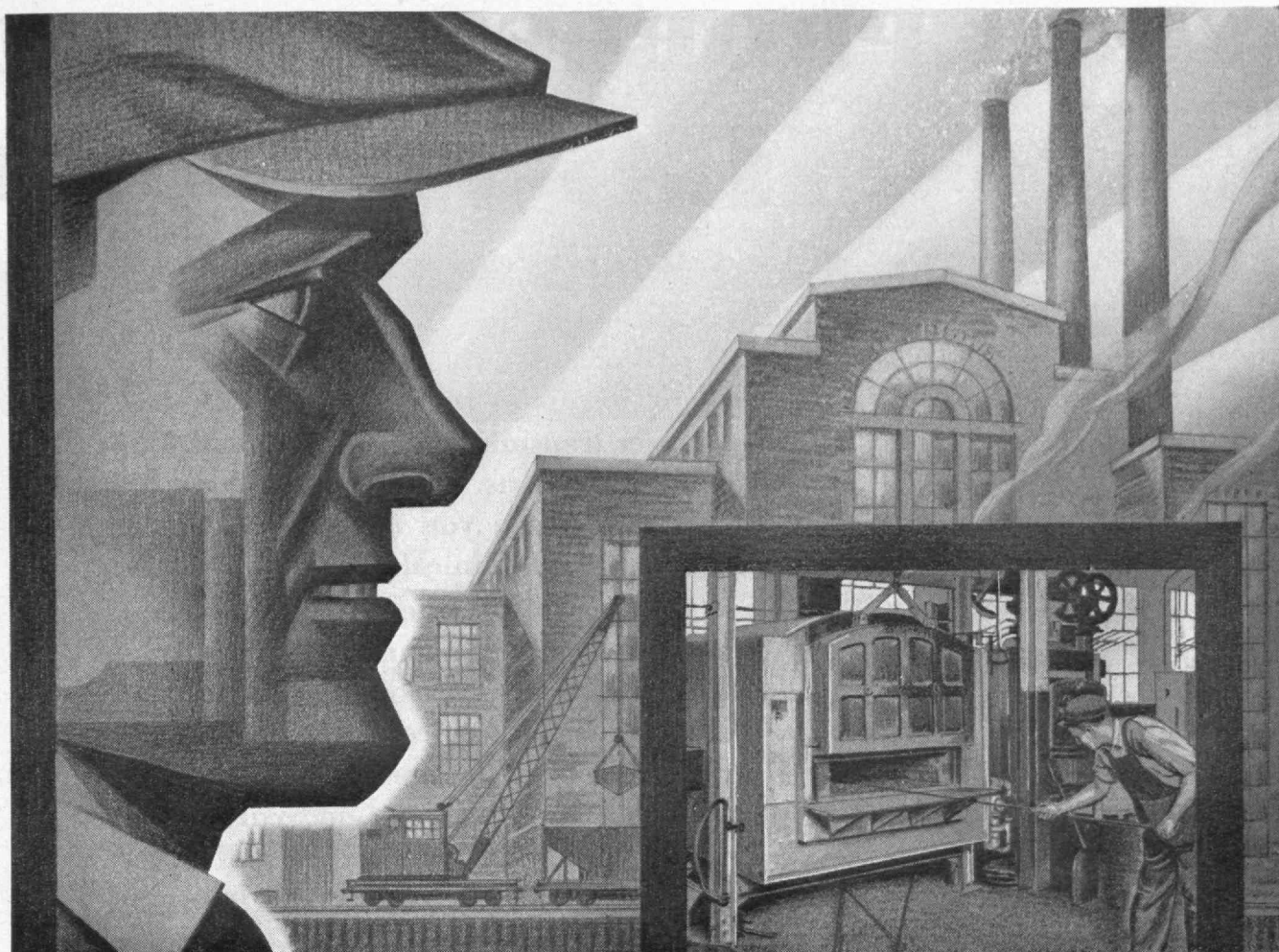
NEW YORK PHILADELPHIA CLEVELAND  
JACKSONVILLE CHICAGO SAN FRANCISCO

## THE TABULAR VIEW

THE discussion on page 242 by Dr. KARL T. COMPTON, President of the Institute, is a notable contribution to the literature on technical and scientific education. It takes into consideration not only the situation as Dr. Compton has found it here at M.I.T., but the general aspects of the problem as it exists in all colleges where instruction is given in science and engineering. It has even a more general appeal, for it discusses the value of scientific and engineering education as compared to a purely liberal arts course of study.

PRESIDENT HOOVER'S Conference on Home Building and Home Ownership created a widespread interest in the more scientific and technological aspects of the design and equipment of small houses, and many people are vitally interested in new developments in this field. The question as to what direction improvements are to take was submitted by The Review to JOHN E. BURCHARD, 2D. The result is the very provocative article beginning on page 239. ¶ Mr. Burchard is well equipped to discuss the future of the home, having been associated for a number of years with the Housing Company of Boston which has been conducting pioneer and fundamental research in new methods and materials for building. Besides Mr. Burchard's professional work as Director of Research and Development of the Bemis Industries, Inc., he likewise has had a great variety of experience in academic work. A graduate of the Institute in the Class of 1923, he subsequently taught a short while in the Department of English, followed by a period as an instructor in structural design in the Department of Architecture. To the January, 1932, issue of *Architectural Forum*, he contributed "The Economic Thickness of Thermal Insulation," a paper which presents a formula for determining the insulation thickness which may be used by architects for any locality and under any given conditions.

INDUSTRIAL EQUILIBRIUM, by ROBERT F. ELDER, concludes the series of articles that have been published in The Review on current economic and business problems. Professor Elder received his A.B. degree from Harvard University in 1922, joining the Institute staff in 1929 as an instructor in marketing. The following year he became Assistant Professor of Marketing. In 1928, he won the Alvan T. Simond's Prize for a paper on "Reducing the Cost of Distribution." He has also written for publications of the American Management Association and a series of articles for *Factory and Industrial Management* on the Relation of Production and Distribution, which appeared under the general title of "Coördinating Sales and Production." ¶ In a forthcoming issue, The Review will present a discussion of German technical education prepared by two prominent German engineers. There will also be an important article on the history of computing ("thinking") machines, another on new developments in chemistry, and, of course, the usual departments.



*Super-heat, vital to industry, must be controlled by Super-Refractories—"Alundum," "Crystolon."*

## INDUSTRIAL HEAT « »

"What are Norton Refractories?" A common question. Briefly, they are materials for handling heat, super-heat.

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Another of the Norton Products vital to the Great Industries. Norton Company, Worcester, Mass.

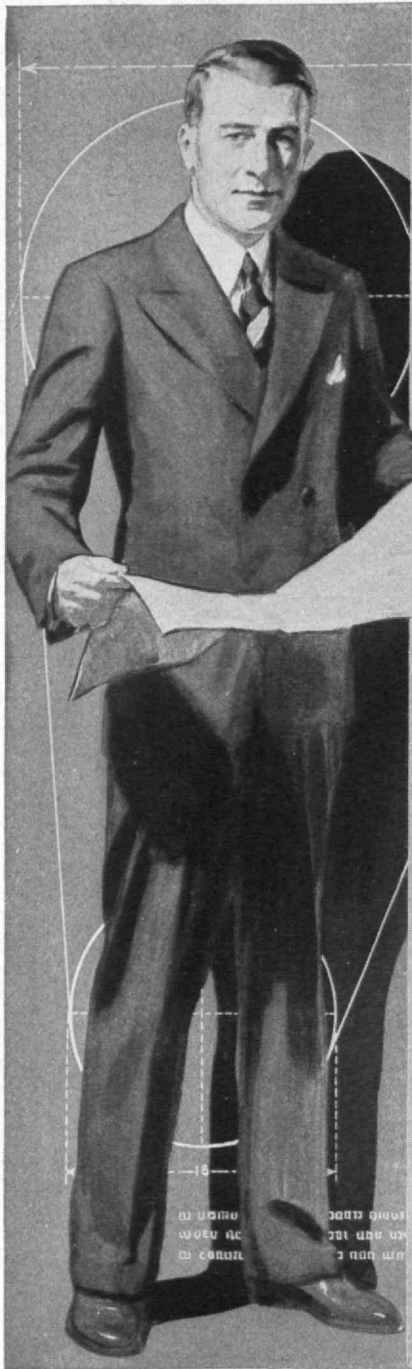
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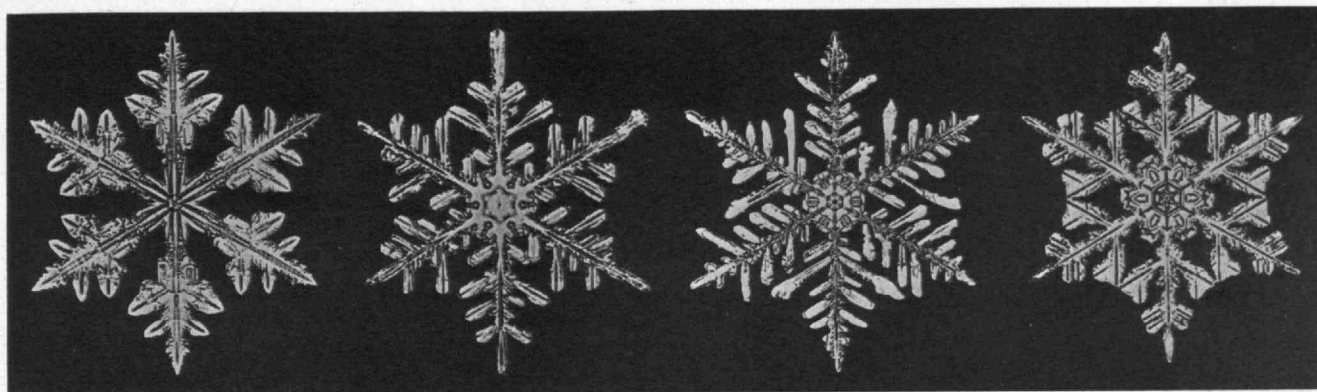
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THE GREATEST NAME

IN RUBBER

# GOODYEAR



Theodor Horydczak

Photomicrographs of snow crystals from the W. A. Bentley collection (assembled by W. J. Humphreys)

# THE TECHNOLOGY REVIEW

A NATIONAL JOURNAL DEVOTED TO SCIENCE, ENGINEERING, AND THE PRACTICAL ARTS

*Edited at the Massachusetts Institute of Technology*

VOLUME XXXIV

NUMBER 6

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*Editor*  
J. RHYNE KILLIAN, JR.

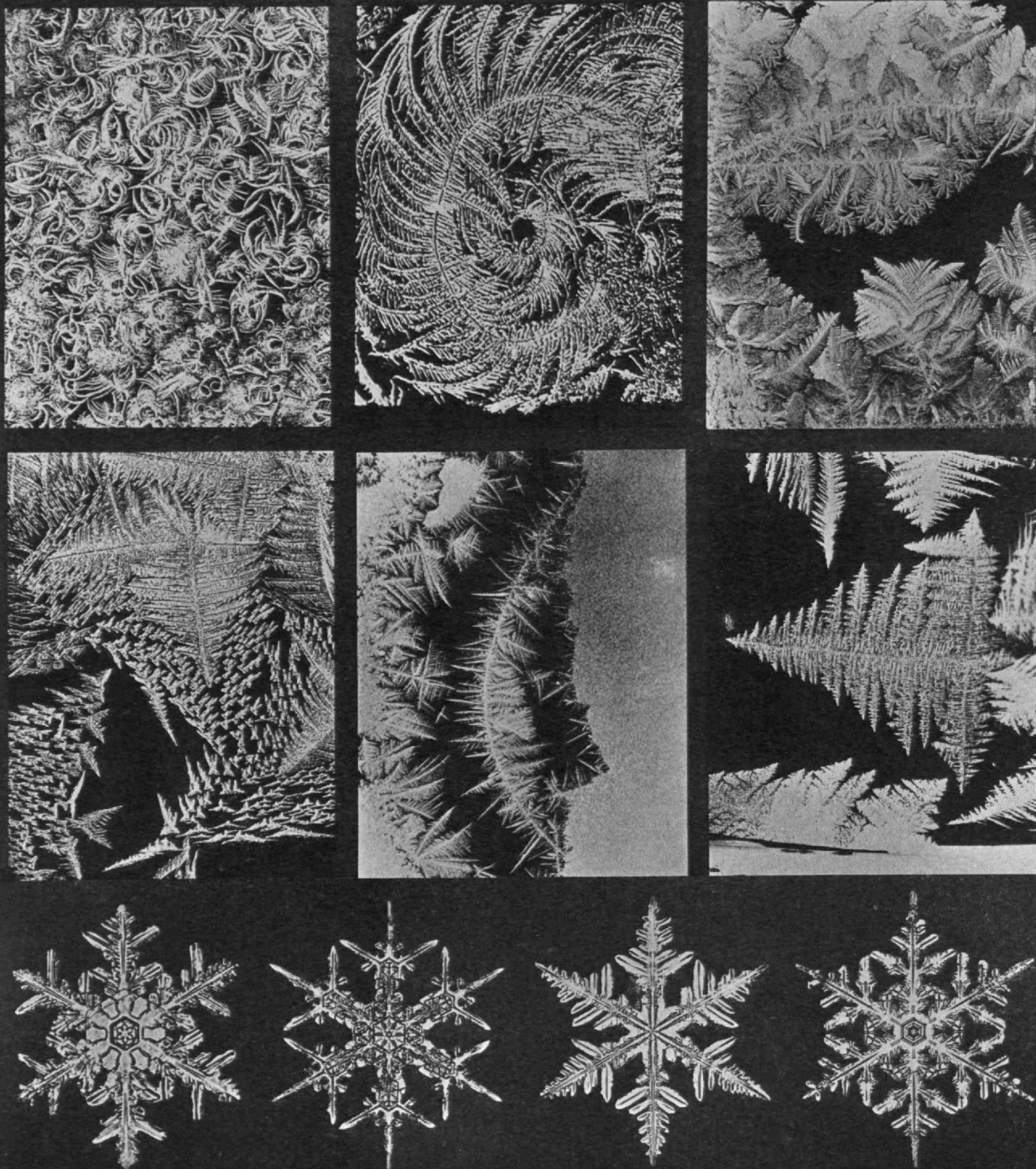
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Theodor Horydczak

#### THE BEAUTIFUL PATTERNS OF FROST AND SNOW

**S**IX photomicrographs of windowpane frost and four of snow crystals from the collection of the late W. A. Bentley, of Jericho, Vt. Windowpane frost seems to gather along abrasions on the surface of the glass to form "the most delicate plumes and outdo the finest lace of hand or loom." The snow crystals are generally hexagonal in outline but of infinite variety in detail. **¶** More than two thousand of Mr. Bentley's photographs of ice flowers, snow crystals, and frost have been assembled into a book by Dr. W. J. Humphreys, meteorological physicist of the U. S. Weather Bureau

# THE TECHNOLOGY REVIEW

Vol. 34, No. 6



March, 1932

## HOUSES OF THE FUTURE *Or the Evolution of the American Home*

BY JOHN E. BURCHARD, 2D

**D**URING the last few years the reading public has been deluged with an astounding array of marshalled fact and fancy relating to suppositional homes of the future. The question of modernizing the building of houses has naturally attracted the serious thought of many who would destroy this last embattled fortress of tradition. The manifold gadgets that have been successfully introduced to the susceptible householder, plus the awe-struck faith with which we accept all of the miracles of modern science, have logically combined to send minds, both deep and shallow, soaring on the wings of fancy. Unfortunately, all that has been needed to pen a few choice words on the general subject of future homes has been an ability to throw words together, a knowledge of the jargon of the house, and an unbridled imagination.

It may be interesting, therefore, to try to extract from the heap of mingled truths and vaporings the kernel of probability, and to hazard a serious guess as to what is likely to become of the home as we now know it in the next 25 to 50 years. With the rapid movements in social structure that seem to be accelerating, with the growth of practical science also apparently speeding up in accordance with some geometrical ratio, it would be dangerous to project the imagination any further.

We must be careful, too, to be very specific about whose house we talk. We shall, for the purpose of this article, confine ourselves to the United States, to a northern climate, and to a district neither super-urbanized, such as Manhattan Island, nor excessively rural. We cannot profitably consider the home of the poor

man, the very existence of which entrenched statistics show to be an economic paradox. We certainly need not pay any attention to the home of the rich man who can afford to remodel anything to his personal desire. Accordingly, let us look at what will probably happen to the house of Mr. John Q. Averageman who comes to the city to work every day, who, around his detached house, has a little land on which he grows a tomato and a nasturtium, and who faithfully keeps up with the nearly latest model of refrigerator, radio, and Buick. For this period, unlike any that has preceded it, sings to the tune of the middle class.

The recent popularity of modernistic art and decoration, brought with a great deal of shouting to the United States by our traveled intelligentsia some years after it had fully developed in Europe (having been really initiated in our own country by Frank Lloyd Wright), has led many people to think that new houses of the progressive-minded will resemble the creations of Mallet-Stephens, Le Corbusier, Mendelssohn, and Dudok. Leaving out the question, which is quite seriously a real one, as to whether or not a home owner is progressive-minded in æsthetics, such a result does not seem likely. In the first place, the history of house development has generally been laboriously slow and quite clearly has taken place by evolution and not by revolution. A new form of decoration is quite all right, desirable, and presumably profitable for a store front, for advertising, and, perhaps, for a jazzy New York couple; but under the solid roof tree of the home owner, it has no place. It seems reasonable to expect that such



aesthetic principles as exist in modernism will be accepted only when they go hand in hand with utility. There is one room in the house where this marriage takes place and of it we shall speak at more length a little farther on.

Moreover, a careful study of modern houses evolved in Europe indicates that they have been developed primarily on the thesis (in so far as they are not merely an attempt to be different) that a great deal of light should be admitted to the house through windows and, as open air spaces are at a premium, roofs must be utilized to their fullest extent. The demand for light is less pressing in America where the sun actually does shine more often and more clearly than in Europe. The need for open space is also less keenly felt by the class of population with whom we are dealing than by similar peoples in Europe, who live nearer their cities because they are not reconciled to a minimum of an hour's commuting. Moreover, the desolation of a series of Corbusier's flat-roofed houses during a wet New England snow storm or a driving Minnesota blizzard is at once repellent and ridiculous. What merit has this sort of provision in our climate? It is only remotely possible that extensive development of the autogiro may demand a flat roof.

There is another serious factor about modernism bothering our Buick driver. Anyone who has tried to make his little 6' x 8' closet into a modernistic den will know what I mean. There is literally not a thing in our *mélange* of domestic accumulation that has any use whatever in the modern treatment. The wholesale scrapping of good solid value does not appeal to Mr. Average Citizen.



When we come to the structure of the new house, we tread on more dangerous ground. There is no doubt that something has to be done about it. Essentially, we have added nothing new to this structure since the Tudor period. Actually, a modern person could be and often is perfectly happy and comfortable in an Elizabethan or Jacobean house which has been modernized in its equipment. The building of houses is undoubtedly backward and needs serious study. And it is getting it. A great many very able men are working diligently on the problem. The general key to the solution seems to be the placing of different parts of the house on some sort of mass-production basis. This is not the place to raise the very serious question as to whether mass-production is economically sound in the long run when applied to goods that have long life and are not for immediate consumption. The big difficulty with the mass-production idea, even if the economic premise is sound, lies not in lack of flexibility, in sales resistance, or any other factor of that sort that may temporarily obstruct its progress. It lies in the fact that the mass-production principle needs mass-production to accomplish its economy and that the house susceptible of mass-production is sure to cost a great deal more in the first instance than the traditional structure. The *entrepreneur* has, therefore, many difficult days ahead of him before he can get sufficient output to justify his

thesis. None the less, the house-building industry is a big one, aggregating many billions of dollars in any normal year, and some form of combined effort may change our structure quite radically. It would not be appropriate for me to endeavor to say in what way this will be done, if 'tis done.

One thing is certain. Any structure, even one that is completely non-revolutionary, must be given sufficient study in the near future so that each artisan does not cut and hack apart the work of his immediate predecessor in the process of building. In other words, there must be adequate preliminary provision for the placement of the accessories which are occupying a greater and greater portion of the entire amount allotted to the cost of a home. Every day some new piece of machinery is being offered to, and accepted by, the public until in this year, 1932, the mechanical equipment of the average home probably numbers at least as many moving parts as the stabled Buick in its attached garage. Curiously enough, despite this tremendous increase in mechanization, occurring principally in the last decade, the saturation point seems, by no means, to have been reached and it is to accessories that we must look for the bulk of the potential development of the immediate future.

First, however, we may note two or three evolutions of the plan which have partly taken place already and which stem directly from our mechanical civilization. The first is the gradual elimination of the porch. In a past, not so remote as to be forgotten by some of us who still feel pretty young, the front veranda was an essential adjunct to American life. We lolled on it in swings and read our books, drank our afternoon lemonade, and even played our evening whist. From its vantage point we watched the placid life of the neighborhood with a mild and friendly interest. But that was in the age of peace when the snort of an occasional buckboard exhaust was the only intimation of the advent of a period when rotation would become as significant as translation. There is no satisfaction in sitting on the front porch now, looking at automobiles as like one another as peas in a pod, filled with people none of whom we have ever seen before nor will ever see again.

Thus the front porch has developed into a so-called sun porch, which is really a sort of living room and more often than not opens on the back yard, where we can look at our little garden and have a modicum of privacy. This development is of great significance socially. It means that more and more we will place our kitchens and service rooms on the street side and take our living rooms, where they belong, into the more secluded areas of our property. It is further possible that in our large cities privacy may be obtainable by a revival of the inner court, or atrium, such as used in Rome and Pompeii. The immediate objections to such a revival would be our arduous climate and the dirt of the contemporary city. But neither of these is insurmountable. Cities may be cleaner in the future and, within the bounds of a modern metropolis, temperatures are materially higher than in the outlying vicinage. That by further evolution we will eventually retreat to the cellar when airplanes are common overhead visitors is by no means an insane idea.

There is an unquestioned tendency to rejuvenate that same cellar and make it into habitable quarters. At present the development is largely in the form of game rooms and bars, but the game stage will pass, at least temporarily, and it is conceivable, too, that the private bar will become only a rudimentary organ of the house body. A more logical development for the cellar spaces will be in the nature of service rooms, such as dryers for laundry and workshops in which our male population can indulge in craft work, carpentry, pottery, weaving — a habit which we shall all soon have to adopt as a means of utilizing spare time if we are to avoid collective insanity.

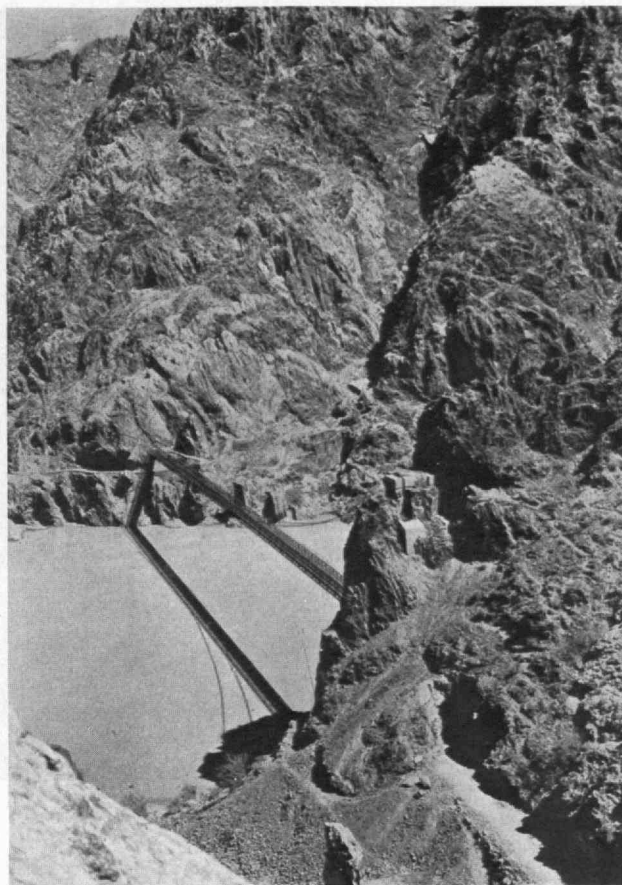


The evolution of the dining room is also long overdue. Whether we like it or not, our type of democracy is making the servant problem more and more difficult and it is quite possible that a good American servant will soon be as extinct as a dodo. This precludes the possibility of eliminating the dining room altogether by making a larger living room and serving meals in this — a reversion to the old Norman hall, which has much to recommend it but which is socially impossible, when entertaining the boss, without servants. The reader who happens to remember some charming dinners served under exactly these circumstances will realize that the hosts were *not* Mr. and Mrs. John Q. Averageman.

None the less the dining room is the most inefficient room in the house and its space is used only about 12% of the day at best and more likely in these times for but one meal. A dual function is, therefore, indicated and I venture to suggest that this will come through a recrudescence of a room we have long abandoned — the music room. In the days when every respectable American family owned a piano and every boy, however unmusical, could drum out the "Miserere" from "Il Trovatore," it was essential to have a room in which music could be performed without disturbing the peace of the rest of the family.

Today the growth of radio sonority, attempting to duplicate the full breadth of an 110-piece symphony orchestra, the development of television, which has been threatening to be successful for a long time, and more particularly the undoubted spread of home cinema, point to the need of a room that may contain a projection screen and the various and multiplying electrical receivers. Such a room could be nicely combined with the dining room by using available ingenious contrivances for getting the table out of the way, or the table could be used as a support for ping pong or billiards. The added advantages of thus removing the radio from its usual sphere of action in the living room would be: (1) that in the dining room it would cover up the feebleness of our conversation; (2) that reading might be reborn among some of our householders. May heaven forbid! the other possibility — that there be a receiver in every room turned on as readily as an electric light.

It has frequently been suggested that the house be made into a large enclosed place and that partitions be movable, thus allowing the householder to change his



National Park Service

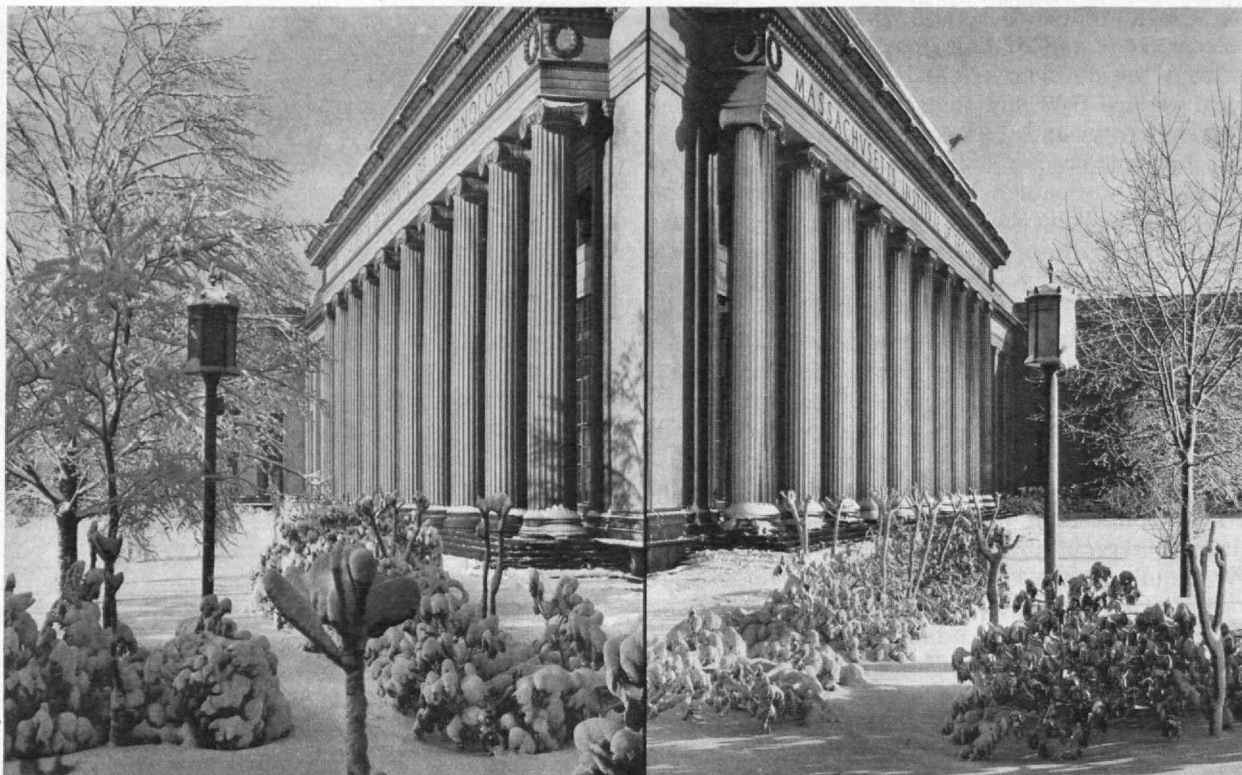
*Kaibab suspension bridge which carries the only roadway across the Grand Canyon in Arizona. The bridge, which is 440 feet long, is supported from eight, one-and-a-half-inch cables. It is provided with a structural steel truss acting both in a stiffening capacity and as guard rails. It is further stiffened by two, one-and-a-half inch wind cables. The south approach of Kaibab trail to the bridge is through a tunnel 100 feet long, cut from solid granite walls of which the inner gorge is formed*

rooms at will à la Japan. Leaving out all question of furnishing and decorations, there seems to be nothing practical in the suggestion until the time when we become completely indifferent to the personality of a locus. At present all of us have our favorite house corners and we simply could not stand to have the dishwasher moved into them when it was time to give the baby a bath or Roger his music lesson.

Bathrooms cannot be multiplied forever and some bright mortal is very soon going to discover that he can take a leaf from an old book and build his toilet and bath in separate compartments, thus about doubling the effective use of the services there provided. We will probably go even further in this direction and separate the lavatory from the bath.

So long as we have combustion units at all, it is perfectly evident that the mechanical handling of fuel and ash is bound to be universal very soon — whatever may be the fuel of the future. If the fuel is a dusty one, such as coal, it will be kept in a bin which has no contact with the cellar save through an automatic stoker and dust will be banished. Gas and oil fuels, already developed with considerable success, (*Continued on page 262*)





M. I. T. Photo

## EDUCATIONAL OBJECTIVES AT M. I. T.

### *Adapting the Institute to New Demands and a Greater Usefulness*

BY KARL T. COMPTON

EDITORIAL NOTE: *Those who are concerned with technical education, whether at M. I. T. or elsewhere, will find the following discussion provocative and prophetic. President Compton first presented it in the form of an address at the Annual Dinner of the M. I. T. Alumni Association on February 6.*

AT THE present time every aspect of our civilization is being subjected to scrutiny to discover if it be good or bad, useful or useless, effective or ineffective. In every activity we are inquiring, "Is this thing worth doing and, if so, is it being done in the most effective possible way?" It is particularly appropriate, therefore, that we should consider critically and constructively the purposes and policies of the Institute.

When Mr. Bradley Dewey, '09, President of the Alumni Association, suggested that I discuss this topic, I at once thought of one of the first letters which I received after I had decided to cast my lot with you in the service of the Institute. It was from an old and wise friend, with long experience as an administrator in another educational institution. He wrote: "Don't make the mistake of most newly appointed college presidents and make a speech about educational policies. The pressure to do this is very great. Most new presidents feel that they have to say something along this line, whether they have anything at the time to say or not. They scrape together something to meet the

emergency. People say kind things about it, so they feel encouraged to try the same thing again in slightly disguised form, and before long they really begin to believe it themselves. From that time on they are hopeless. Don't enunciate any educational policies until you have lived with the job at least a year."

I believe that I have, until now, avoided educational sermons. But now I am going to "fall from grace" or "rise to the occasion," according to your verdict, for three good and sufficient reasons: first, President Dewey's request; second, the spirit of the times to which I have alluded; third, the fact that many of you have sons, daughters and young friends who look to you for advice regarding their training, and you therefore have to face problems and questions on whose solution the things which I have to say have a direct bearing.

The general plan of my remarks is very simple. First, and most important, *What are our objectives?* Second, *What methods or policies are being followed in the hope of attaining these objectives?* Finally, *Are these objectives worth striving for and can we improve our methods and policies?*

*Objectives.* There are two, and I think only two, objectives of the M. I. T. One is the training of our students to understand and be adaptable in the world in which they live. The other is the application of science to human welfare through the advancement and application of knowledge, and the training of experts.



*Cultural Training.* What do we really mean by culture? According to the dictionary, culture is "the training, development, or strengthening of the powers, mental or physical, or the condition thus produced; improvement or refinement of mind, morals, or tastes; enlightenment or civilization." There was a time when knowledge of science, and particularly knowledge of things useful, was considered foreign and even antagonistic to culture. Literature, music and art held the center of the stage, as well as both the wings. It was a cultural pursuit to delve into the study of the tools and machines of the cave men or the Egyptians, but not to try to understand the science and the machines of the civilization in which we actually live.

In recent years this viewpoint has rapidly changed. Science has so permeated our civilization that, even though it be imperfectly comprehended by the majority of people, it nevertheless has every bit as universal an appeal as do literature and art. Nowadays that man or woman is not cultured who is ignorant of, or uninterested in, the science and engineering art. It is not possible to understand our environment or to live intelligently in it without an understanding of science and engineering.

I should define culture as "the sympathetic understanding and appreciation of life." Life has various aspects, emotional and intellectual. "Music hath charms to soothe the savage breast." In literature we have access to the finest thoughts and feelings of mankind. Art brings to us beauty of form, color and expression. All of these, and religion, have power to bring to us a mystical uplift of feeling. Even so do likewise the particular objectives of our studies at the Institute: architecture, science and engineering. They, too, express symmetry and intellectual beauty of form and relationship. They, too, require imagination. But science and engineering, in addition, possess a power and exercise a discipline which render them unique.

The mental discipline inculcated by the study of science and engineering is, I believe, at least as important an aspect of their cultural value as is the acquirement of knowledge regarding our surroundings. Science requires straight and independent thinking. Every hypothesis or idea is capable of definite proof or disproof. The habit of mind that submits every idea to rigid test is of utmost value. Much of the loose thinking in social, educational, political and economic affairs would be avoided if workers in these fields could be given a real training in scientific thinking. Scientific studies possess the same advantages as do the classics in giving a training in precise thought and expression, but in addition they afford training in observation, in inductive and deductive reasoning, in exact checking of hypotheses and assumptions. And at the same

time they are the key to the understanding and control of our environment.

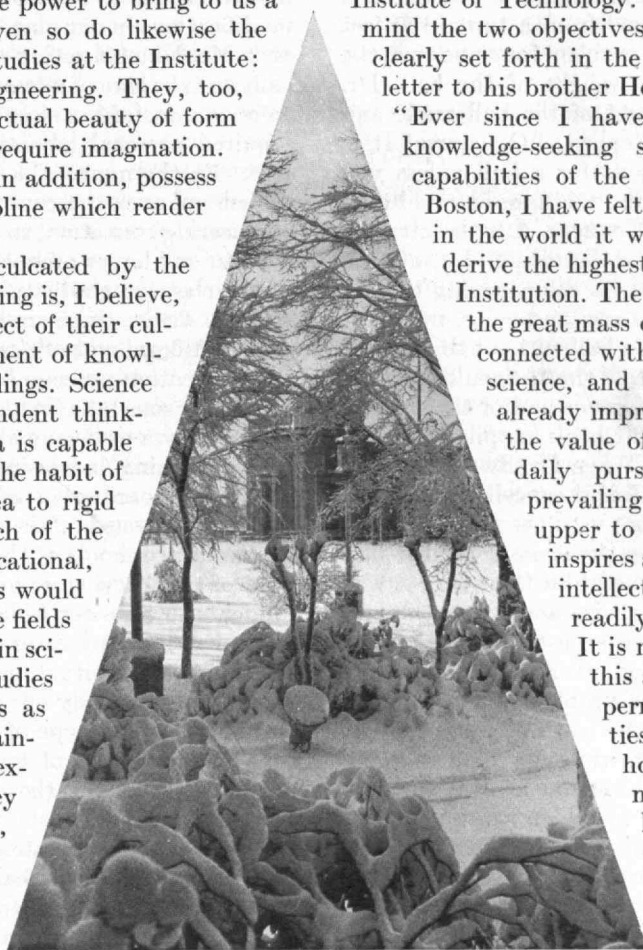
At the M. I. T. our course of study includes language, literature, history, economics, art, pure and applied science. We emphasize science more than do the so-called liberal arts colleges. In view of the facts mentioned above, our course should inculcate particularly valuable habits of mind and, in the truest sense of the word, instill a peculiarly fundamental culture. And, if it be true that science pervades the culture of this early part of the Twentieth Century, we have only to read the signs of the times to predict its continually increasing importance and influence.

Thus I submit that Technology need offer no apologies for its course. It has been, and is, in direct line with the trend of the cultural developments of the age.

*Application of Science to Human Welfare.* This is the second of Technology's objectives. The notion that science is useful as well as intellectually ornamental is of relatively recent origin, speaking in terms of the age of civilized man. Benjamin Franklin was one of the earliest preachers and practitioners of this doctrine, with his contributions to the art of heating, ventilating, navigating and meteorology. His contemporary, Count Rumford, spent much of his equally active life in developing science for the service of mankind, and founded the Royal Institution of Great Britain specifically to aid the poor through the practical applications of science. Fifty years later, William Barton Rogers was working for the establishment of the Massachusetts Institute of Technology. That Rogers had clearly in mind the two objectives which I am discussing was clearly set forth in the following quotation from a letter to his brother Henry, dated 1846:

"Ever since I have known something of the knowledge-seeking spirit, and the intellectual capabilities of the community in and around Boston, I have felt persuaded that of all places in the world it was the one most certain to derive the highest benefits from a Polytechnic Institution. The occupations and interests of the great mass of the people are immediately connected with the applications of physical science, and their quick intelligence has already impressed them with just ideas of the value of scientific teaching in their daily pursuits. Besides this, the high prevailing taste, diffused from the upper to the lower classes of society, inspires an earnest appetite for richer intellectual food than they can now readily obtain."

It is not necessary to point out to this audience how applied science permeates our lives and activities. Our food, health, clothing, houses, transportation, communication, conveniences, luxuries and necessities all involve a high degree of scientific knowledge in their development and technical skill in their production.



It would require the labor of five thousand million slaves to equal the energy that is daily used in this country and obtained from coal, oil, gas and water power. It is the great productive power made available in machines by the engineer that provides us with so many desirable things in life — material things like comfortable and convenient homes, or railroad trains or telephones, and immaterial things like time for schooling and recreation.

Because of its basic value to society, this second of our objectives is also fully deserving of our support. It is an even more essential service to society now than ever in the past, because scientific and technical progress have advanced to such an extent as to require a higher degree of training than ever before in order to "carry on."

To sum up this phase of my remarks, therefore, I would say that M. I. T. has been in the past, and can be even more in the future, a cultural and economic asset of far-reaching significance to this community, to this country, and to the world.

### *Some Problems of Educational Policy*

LET me now direct your attention to a few questions regarding our methods and policies. Some of these questions have to do with policies which are traditional and have become firmly established in our habits of thought. They remind me of an illustration used by my friend Dr. Swann, Director of the Bartol Research Laboratory. Dr. Swann gave to a student the problem of calculating how long it would take for a ball to reach the ground after being dropped from a tower 100 feet high. After puzzling over this problem for some time the student came up to ask the weight of the ball. Dr. Swann asked him if the weight of the ball made any difference, and the student replied, "Of course! It is impossible to make calculations for a ball unless you know its weight." So Dr. Swann told him he could take the weight of the ball to be 5 ounces. A little later the student came up, still in mental distress, and wanted to know the size of the ball and its color, saying that of course a ball must have some size and color, in fact it was impossible to think about a ball without thinking of its size and color, and he was told that he could consider the ball as 9 inches in circumference and of the color of a baseball. So the student went back happily and soon turned in the correct answer. When Dr. Swann pointed out that the weight of the ball had cancelled out in his calculations and that he had not used the size and color, and that the answer would be the same even if it had not been a ball at all, and asked him then why it was necessary to know the weight, size and color, the boy replied that he had always been accustomed to think of balls as having size, weight and color, and that he had not seemed able to grasp the problem until he knew what these characteristics of the ball were.

In a similar way it is worth while for us to ask ourselves the question as to what extent our own methods are determined by the way in which we have been accustomed to think about things, and to what extent our attention has been focussed on the weight, size and color of the ball instead of being centered on the essential features of the problem.

Our curriculum is divided into various departments, such as Civil Engineering, Mechanical Engineering, Electrical Engineering, Chemical Engineering, Physics, Chemistry, Architecture, and so on. Within these various departments are special courses on such things as steam engines, highway construction, railroad transportation, electrical communications, fire assaying, relativity; and so on. The question arises as to whether these subdivisions and these topics represent the things which we would emphasize if we faced the problem of organizing our work with all our present knowledge and free from prejudice, or whether they exist in part as relics of past activities and habits of thought. It is certain, I think, that an intelligent study of this question will show that we are now focusing too much attention on some things whose usefulness has been superseded by other things which we have not as yet adequately considered. A committee of the faculty is at present actively engaged in studying this problem and it remains to be seen whether their consideration will lead to the recommendation of a sweeping modification in our departmental and course organization, or whether the suggested changes will be of a minor nature. In any case, it is certainly wise to give serious thought to such matters from time to time.

A second question relates to our methods of admission of students from high and preparatory schools and as transfers from other colleges. The present methods have worked well and perhaps would be vigorously defended if questioned. It is possible, however, that new elements in the situation may make it advisable to introduce modifications in our plan of admission. For example, the new MacKinnon rating system is adequate automatically to take care of admissions on trial which heretofore were a constant source of annoyance because each required personal administrative attention and initiative. Furthermore, the development of engineering schools all over the country has changed the aspect of engineering education, so that we are destined to receive a larger and larger proportion of students as transfers to upper class or graduate work from other engineering schools. Again, there are an increasing number of Technology Alumni and others able to give their sons whatever education appears best to them and who wish to have their sons take first a course in a liberal arts college, followed by a professional course at Technology. Again, it is becoming increasingly evident that the College Entrance Board plan of admission is essentially an Atlantic seaboard affair, and that the high schools and preparatory schools of the great section of the country west of the Alleghenies not only do not encourage their students to take our College Entrance Board examinations, but in many cases definitely advise them against it. All of these situations suggest that we might advantageously modify our plan of admissions so as to encourage the right type of transfer student and to facilitate the admission of high-grade students who are at present deterred by the limitations of the College Entrance Board system.

A third question relates to the policy of appointments and promotions on the instructing staff. In many quarters there has evidently been a fairly well-defined feeling that any graduate who makes a very good



record can look with considerable assurance to appointment as an assistant if he desires it. The assistant has a general feeling that he has a right to expect promotion to an instructorship, and the instructor has a similar reasonable expectation, which sometimes amounts to a feeling almost of a right, to appointment to an assistant professorship. In some ways this attitude is a very laudable one, for it shows ambition and interest and is a spur to good performance. On the other hand, there are some unfortunate features in such a procedure. There cannot possibly be found enough places in the higher grades of appointment to take care of all of the assistants and instructors who are needed and whose performance is satisfactory, and failure to receive such promotion may result in a man's remaining for so long a time in a subordinate position as to sap his enthusiasm, self-respect, and general value to his department. At the same time he may pass the age at which he can readily find openings in other places, and his presence blocks the way for introducing continually new blood and vigor. A number of educational institutions have adopted the definite policy of limiting terms of appointment of assistants and instructors to a maximum of not over three or four years, with the understanding that at the end of this term the instructor for whom a place cannot be found in higher rank must seek a position elsewhere. In every institution of my acquaintance which has adopted this plan, the reaction on the institution and also on the *esprit de corps* and success of even those instructors who are not promoted has been excellent. Would not such a plan have a stimulating effect in our own Institution?

The fourth question is one which I have discussed on another occasion and has to do with the relative emphasis which we should give to fundamental as compared with highly specialized or technical subjects of study. A generation ago our industries needed men trained in various techniques and looked to institutions like ours to supply them. There has, however, been a great change in the situation during the past 30 years. The number of specialties has multiplied tremendously, and along with them the variety of technicalities which must be known to operate our highly complex system. Paradoxical as it may seem, this change makes it more and more important that our technological schools should lay relatively more emphasis on fundamental and less on specialized studies. One reason for this is that neither the student nor his professor can possibly foresee what special knowledge or technique the student will be called upon to exercise after he goes out to his life's work. If his training has been in a highly specialized line, the chances are that he may never have the opportunity to use it. If, on the other hand, his training has emphasized the fundamental principles of science and engineering which underlie all specialties, he will be in a position intelligently to attack the variety of specialized problems which he will meet. A second reason is found in the highly organized character of the large industries which employ so many of our graduates. These industries prefer and are equipped to train the men who come to them in the particular jobs which they are to do, and their leading men have made it very clear that the men whom they wish to employ are men who have a solid



M. I. T. Photo

foundation of instruction and training on which they can build, and not men for whom an attempt has been made to give a training in the manipulations which they will be expected to carry on in their industrial work. It is realized that these considerations may apply more strongly to certain fields than to others, but I believe that it is generally recognized that relatively increased emphasis on fundamental lines of study and training is the thing toward which we should work in all branches, except perhaps for a few new and pioneer branches of applied science in which the technique is still being developed and in which such training as can be had must be attained in institutions like ours where the development is taking place.

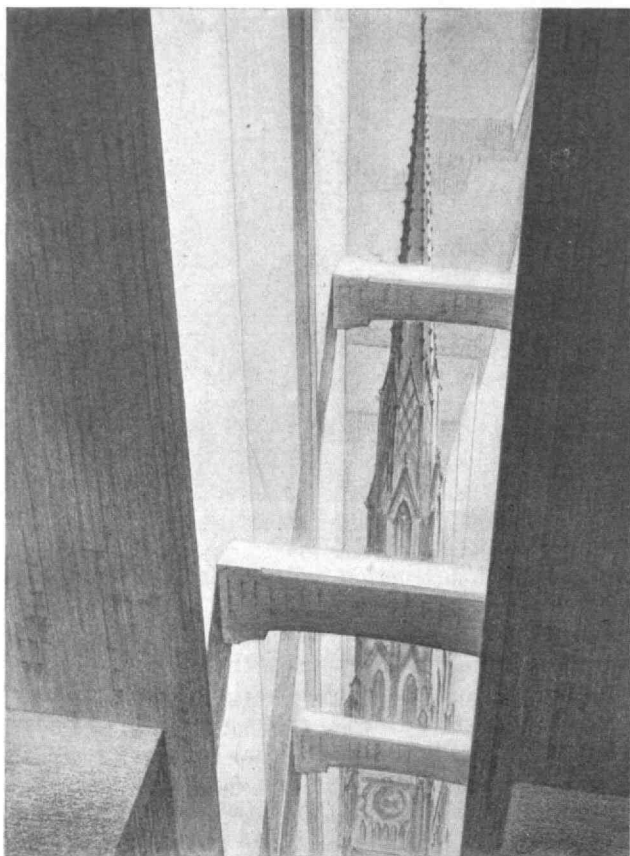
### *Is There an Overproduction of Technically Trained Men?*

PERHAPS no question in regard to our activities is asked more frequently than the question as to whether we and the other technological schools may not be turning out more technically trained men than the activities of the country can absorb. This is an extremely important question, the answer to which should have a controlling influence on our policies. I should like, therefore, in conclusion, to direct your thoughts to some of the aspects of this question.

It is certainly true that in this as in every other field of life competition is becoming more and more severe. In the early pioneer days there was, comparatively speaking, no such thing as competition. The entire country and all its resources lay open for the taking. To take advantage of the resources required initiative and hard work, but it involved relatively little competition. The same thing was true of industries such as the electrical and chemical industries in their infancy. The whole field lay open before them to be conquered. The same thing again was true of the opening of technological schools. The field of applied science was a virgin field. It had to be opened up by hard work and by education of the people to realize its potentialities, but there were many more opportunities than there were men to take advantage of them.

(Continued on page 266)





*From a pencil and crayon drawing by Leopold de Postels of the de Postels Studio*

IN THE January Review, Professor Ralph E. Freeman discussed the theory of industrial equilibrium. Briefly, our industrial structure is in a state of stable equilibrium when all commodities are being produced in the right proportions. When we give a disproportionate share of our efforts to the production of certain types of goods, symptoms of distress appear which are quite analogous to those of an individual who has persisted in an unbalanced diet. In theory, the law of supply and demand automatically cares for a temporarily unbalanced situation by causing prices of the overproduced goods to fall. This causes labor and capital to be attracted away from the industries where overproduction exists into others where production is relatively low and the outlook for profit correspondingly greater.

In the long run, this process does operate. In our present complex, industrial society, however, there exist many frictional forces which restrain the operation of fundamental economic forces until the unbalanced condition has passed certain limits. These hampering influences possibly permit smoother sailing of our economic craft in moderately calm waters, but in stormy seas they augment the violence of the basic stabilizing forces, and cause extreme discomfort to the passengers.

One of the causes of friction in our present economic order is the tendency for fixed costs, represented by plant and equipment, to become a constantly larger part of the total cost of production. This, together with the tendency toward special-purpose equipment, makes it constantly more difficult to get capital out of an in-

# INDUSTRIAL

## ITS RESTORATION AND THE

BY ROBERT F.

dustry. If an industry has become overexpanded through overinvestment in specialized buildings and machinery, the period required for the law of supply and demand to correct the situation may be roughly measured by the lifespan of the productive facilities involved. The bankruptcy of individual producers does not in most cases mean the junking of their plants. Consequently, the only corrective influence possible is the curtailment of the flow of new capital into the industry.

Here, however, we find another lag in the tendency for the investment of new capital to be artificially directed. It has been the policy of many corporations to retain and reinvest in the business a considerable proportion of their corporate earnings. To the extent that this is done, the flow of funds into industry is subject to the judgments of boards of directors, rather than to the free working of economic forces. The policy is harmful to the extent that these judgments fail to be economically sound. There is another artificial direction of capital in the policies of investment houses. Finding it easier to sell securities of industries with good records of earnings in the past, these houses have promoted such issues, going so far as to seek out opportunities for new investments in particularly popular fields. It does not necessarily follow that because an industry has in the past used its capital profitably that it can efficiently utilize additional funds. The result of these two artificial influences has been in many cases the further expansion of productive capacity in already overexpanded industries.

This maldistribution of new funds has also been due in part to the fact that it has been possible to a certain extent to create an artificial and temporary demand for the products of certain industries. High-pressure selling and advertising methods have made it possible to broaden markets without decreasing prices, creating, as it were, a new kind of elasticity of demand. In so far as business men have used selling pressure to stimulate demand beyond a level which can be maintained at reasonable cost, they have delayed, but not avoided, the inevitable process of readjustment.

The operations of the law of supply and demand are further hampered by the increasing ratio of distribution costs to retail prices, which operates to diminish the effect of elasticity of demand. In the case of many goods, the cost of production does not represent more than 25% to 50% of the price the consumer pays. Savings in production costs usually come about through commitment to increased volume. The process of distribution, however, seems to operate under diminishing returns. Consequently, the savings in production costs, through additional investment, often prove insufficient to influence prices enough to increase consumption by an

# EQUILIBRIUM

## PART THE ENGINEER MUST PLAY

ELDER

amount sufficient to earn a profit on the new investment. Business men, as a class, have been slow to sense the effect of costs of distribution in limiting the elasticity of demand.

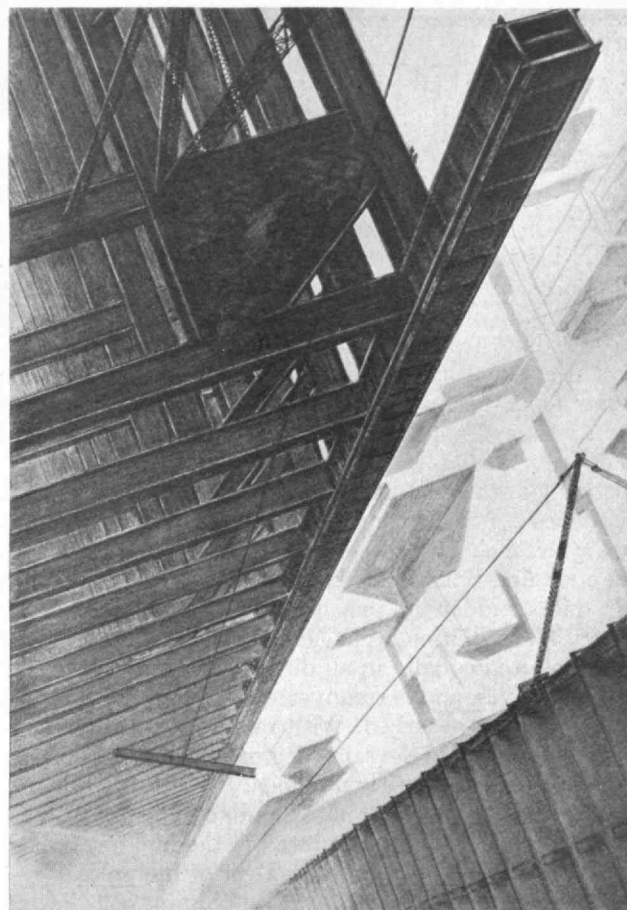
When the full effect of these frictional forces has been overcome, and the operations of economic processes begin to make themselves felt, we have a condition of sterilization of that portion of our wealth which constitutes our overinvestment in overexpanded industries. A period of readjustment occurs, which usually results in writing down investment values and repaying the surplus capital in the form of lower prices. Characteristic of this period of readjustment is the accumulation of additional savings, which serve, when they are called into use, as the basis for new advances in industry.

To call these new savings into use, there must be possibilities for their profitable utilization. Since a severe depression affects our entire society, not only is spending power reduced, but a condition of fear paralyzes a large portion of even the reduced power to spend. Money in the bank, or even gold in the safe-deposit vault, becomes more attractive than formerly, and goods for consumption become less attractive. The process of deflation proceeds to extremes as great as those of the previous inflation.

The creation of possibilities for profitable use of the idle funds accumulated during depression depends on a resumption of normal spending for consumption. Attempts have been made, possibly prematurely, to induce normal spending through patriotic motives, as in the persistently attempted "Buy Now" campaigns. These attempts indicate a complete lack of understanding of consumer demand. Consumers, in the mass, are innately selfish. They buy because they want. The type of selling which stimulates wants and creates desires is effective to a considerable degree in inducing greater spending. Its effect, however, is limited by considerations of cost, and it cannot do the whole job.

The most vital influence for increased spending is the creation of new products or the radical improvement of old ones. The desire to attain a higher standard of living and to enjoy new comforts is infinitely stronger than the desire to have more of existing goods. When a man has one automobile, it is harder to sell him a second than it is to sell him a radio or an electric refrigerator which he does not possess. It is perhaps significant that the most conspicuous examples of concerns which have resisted the depression are those which have brought out totally new products or made their old products decidedly more attractive to consumers.

New developments of this sort vastly stimulate the process of recovery from depression. Totally new undertakings, started after deflation of commodity, labor, capital, and land costs has taken place, find it easier to



*From a pencil and crayon drawing by Leopold de Postels of the de Postels Studio*

earn profits than old industries which are still struggling with readjustments. By showing new possibilities for profit, they draw idle funds into use. The building of factories and machinery for their manufacture increases employment, and not only creates new purchasing power for the new articles, but brings into the market people who have been forced to curtail their purchases of existing commodities. Thus, industry as a whole is stimulated. Increased demand arrests the falling price trend; profits begin to be made in other industries; and the up-swing of a new cycle commences.

There is a serious question as to whether a theoretically correct rate of invention of new products might prove a stabilizing influence in all phases of the business cycle. It is at least an interesting speculation to wonder if, during our next period of expanding business, a sufficiently rapid acceleration of development of new goods to absorb most of the proceeds of industry would suffice to maintain a dynamic balance of our industrial equilibrium. In the past decade the prime interest of management has been to improve the efficiency of manufacturing existing products. In doing so, capacity in many industries was increased faster than consumption. If satiation of markets, rather than maldistribution of income, was primarily responsible, and there is at least some evidence of this, then a policy of devoting at least as much attention to the creative type of research as to the analytical type would seem to promise beneficial results.

*(Concluded on page 270)*

# THE TREND OF AFFAIRS

## Heating Homes by Radiant Energy

**I**N his article on the house of the future (page 239), Mr. Burchard notes a growing interest in radiant heating. What is this system of heating and how does it differ from present methods?

The conventional heating devices now in general use accomplish their purpose by convection, the transfer of heat by masses of warm air set in motion by steam and hot water radiators, and hot air furnaces. In contradistinction, the pleasant warmth of the open fire is heat produced by radiant energy. In central radiating heating systems, however, radiant heat is produced, not by an open fire, but by radiation from coils of pipe or hot air ducts hidden in panels within walls, ceilings, or floors. The radiation propagated by these heating panels is distributed equally in all directions after the manner of light waves, and is reconverted into heat in the body by which it is absorbed. With radiant heat lower temperatures will give the same degree of comfort as higher temperatures with other methods.

The heating units of most radiant energy systems must necessarily be incorporated in the building during an early stage of construction. Most of the present systems consist of continuous or manifold pipe coils heated by steam or hot water. Electrically heated panels, believed to be the most efficient method of producing radiant heat, have been used in some installations, but until electricity becomes cheaper, this method is not likely to be adopted for general use. Still another method, developed by A. H. Barker, an English engineer,

uses flat metal radiating surfaces. These may be installed across a finished wall or ceiling with a suitable molding to give the appearance of a raised flat panel. The advantage of this method is that it can be installed in old buildings without a great amount of alteration.

Installations in floors have proved efficient, although heat from this source may become uncomfortable for those with tender feet. Walls and ceilings now seem to offer the most acceptable location for radiant heating panels, which may be placed in such a manner as to assure a remarkably even temperature.

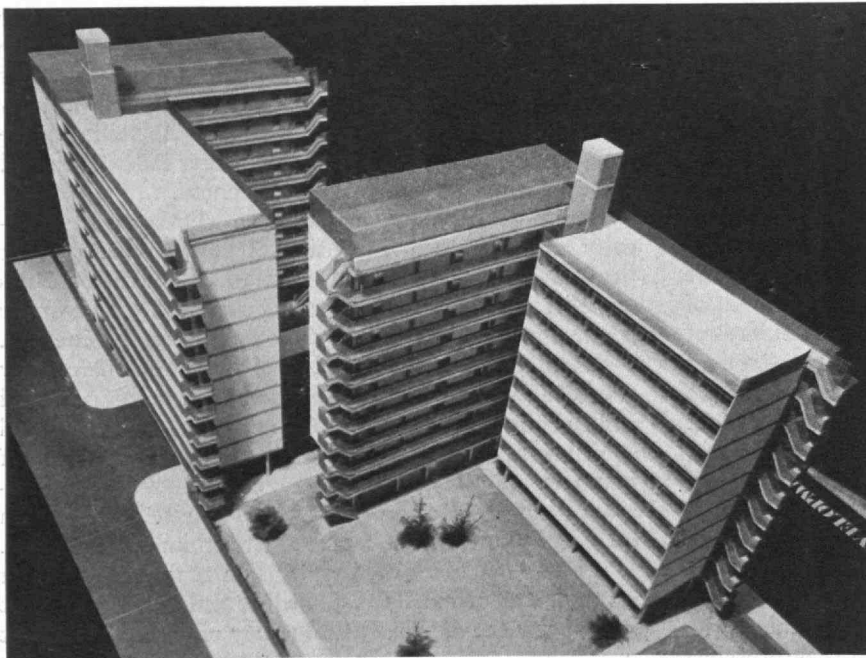
The production of heat by radiant energy is much slower than by convection heating and once the building is warmed by this method, it likewise takes a long time to cool. These facts might prove to be a disadvantage in certain climates where heat must be controlled to meet rapid changes in temperature.

C. G. Heys Hallett, an English engineer, who discussed the subject before the Institute of Heating and Ventilating Engineers in London recently, declared that the ideal radiant energy heating system must possess these characteristics: (1) The surface temperature of the units must be reasonably high (but not high enough to "burn" the air or dust contained therein) in order to

- (a) obtain a large percentage of radiation,
  - (b) permit the intensity of radiation to be varied over a wide range, and
  - (c) limit the area of surface required.
- (2) The surface must have a high emissivity. (3) The units must be of such a nature that the direction of the

radiation emitted can be controlled in order that the distribution may be perfected and modified to suit conditions. It is also important that as little radiation as possible should be allowed to fall on external walls. (4) The system must not be sluggish in operation. The rate of heating and cooling of the units should not be sufficiently great to cause rapid fluctuations in radiation intensity; it must be possible to obtain a state of comfort with rapidity. (5) The units must not depend for their effect on raising the temperature of the structure of the building, as this not only introduces a high degree of sluggishness, but greatly increases the heat loss from the building.

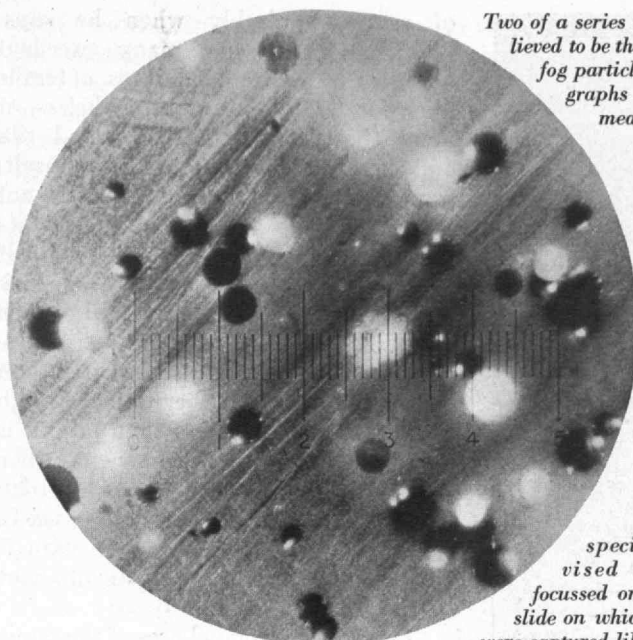
Although the public has heard little of the progress of radiant heating, many important buildings in England are now warmed by radiant energy. In this country radiant heat is used in the British Embassy in Washington, and several residences



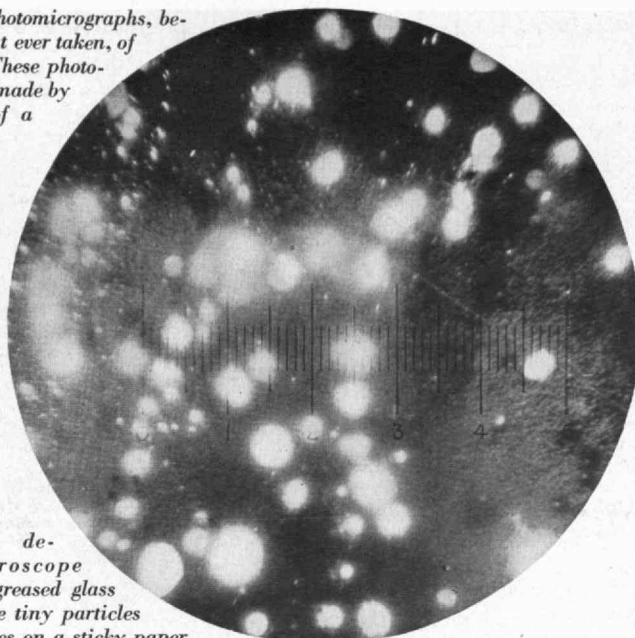
*Model of a proposed apartment group to be built of steel and to stand 14 feet above the ground on stilts. Beneath the elevated first floor would be playgrounds and parking spaces*

*Designed by Howe and Lescaze*





Two of a series of photomicrographs, believed to be the first ever taken, of fog particles. These photographs are made by means of a



specially devised microscope focussed on a greased glass slide on which the tiny particles were captured like flies on a sticky paper.

The size of the fog droplets shown in these photomicrographs may be judged by referring to the micron scale which is visible, the divisions of which are 2 ten thousandths of an inch apart. Below is shown an observer, H. C. Houghton, '25, looking through the microscope designed at M. I. T. and used at the Institute's experimental station at Round Hill, Mass.

to be heated by this method are now being built near New York. England's most impressive demonstration of the efficiency of radiant energy heating is in the great Liverpool Cathedral, where heat is carried in ducts beneath the floor from which the energy is radiated. The floor of the cathedral is maintained at a temperature of 68°, which was found the proper condition for comfort, and tests at a height of 97 feet above the floor showed a steady temperature of 58.5°, compared with 60° at a height of four feet above the floor. This installation recalls the method of the Romans, called the "hypocaust." This system carried the hot gases from a fire in the basement through ducts or flues built in the floors and walls.

Several English public buildings, among them a number of schools, hospitals, and auditoriums, are equipped with radiant heat, and studies of these installations indicate that this method has many advantages over the present systems.

Some investigators in this field have made interesting studies of the efficiency of radiant heat with scaled models of various types of rooms and buildings. In view of the fact that radiant heat is propagated in the same manner as light waves, it is possible to carry on such research by the use of lights, the degree of illumination corresponding to the amount of radiant heat necessary.

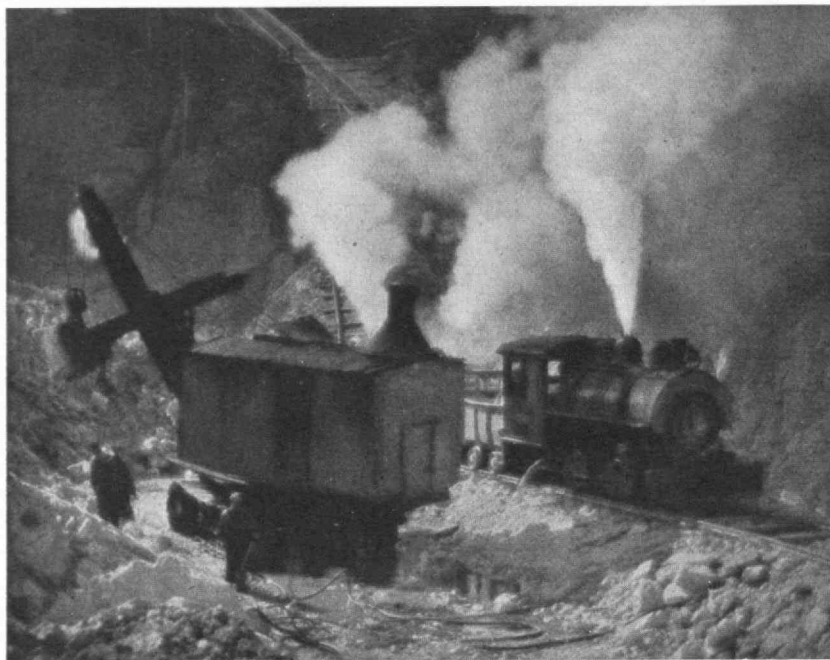
### *Drugs, Deceit, Detection, and Dementia*

"CHILDREN and fools," they say, "tell the truth." It is easier to tell the truth than it is to lie, for a true answer to a question is the natural and spontaneous reaction to a comprehension of its purport. No thought is needed to

tell the truth, but the devising of a lie requires a certain amount of intellectual effort. Children haven't learned the art and fools haven't the mentality to practice it. A person who makes a true answer responds quickly, but one who has to think of a plausible falsehood is delayed in his response. The latter, when cross-examined, cannot avoid delaying his false answers, but he can deliberately delay his true answers, and the reaction time is not necessarily an indication of the truth or falsity of his replies. The "lie detector" is an electrocardiograph, a device for making a permanent record of the action of the heart, and the heart performs differently when one is telling a lie.

Scopolamine, or "twilight sleep," has been heralded as the "truth drug," for a person who is under its influence does not give false answers, at least not intentionally. It is the same with actual sleep. If we waken a sleeper by asking him a question, we get the true answer unless — "to sleep, perchance to dream, ay, there's the rub" — unless the response may chance to be determined by a dream in which the sleeper is involved at the moment when we awaken him. An individual under the influence of scopolamine will give spontaneously the answer which his drugged mentality accepts as true. If it has to do with pink crocodiles with blue eyes dancing on the lighting fixtures, so much the worse for the questioner. Scopolamine has the further disadvantage that it makes people easily subject to suggestion. A series of well-planned, leading questions addressed to an innocent person who has been dosed with the "truth drug," a series culminating with the question, "You murdered Mr. X with an ax, didn't you?", might easily provoke a response of "Yes, I did, with an ax."



*Winter in the quarry*

Charles R. Phipps

Hyoscyamine is similar to scopolamine in its action, and it has to a remarkable degree the power of producing suggestibility. It is supposed to be the drug used by Circe in changing Ulysses and his men into swine. She perhaps introduced into their food the herb which contains the drug, and then after an interval urged them sympathetically, "You are pigs, aren't you? Why don't you act like pigs? Be yourselves. Get down on all fours, and wallow and grunt." At any rate, the herb, hyoscyamus, and a psychologist like Circe could have made them do it.

Dr. Erich Lindemann has been recently experimenting at the Psychopathic Hospital of the State University of Iowa with the synthetic drug, sodium amytal, a derivative of barbituric acid related to the well-known drugs, veronal and luminal. He finds that a small dose of the drug, insufficient to produce anaesthesia, causes a feeling of strength, self-confidence, serene contentment, and a warm emotional attitude toward others. The individual, so drugged, is willing to discuss the most intimate matters and seems incapable of refusing to answer questions. His state of mind is such that it is easy for the psychiatrist to get at the source of his trouble. We are not informed whether the drug also makes a person easily open to suggestion.

### *Ramie Fiber*

ONE of the most persistently recurring of current fables is that ramie fiber (also known as rhea or china-grass) is on the verge of revolutionizing the textile industry. Once or twice every year someone announces that a new process of decortication or treatment of ramie fiber has been discovered which places it in a competitive position with cotton, flax, and other important fibers now in use.

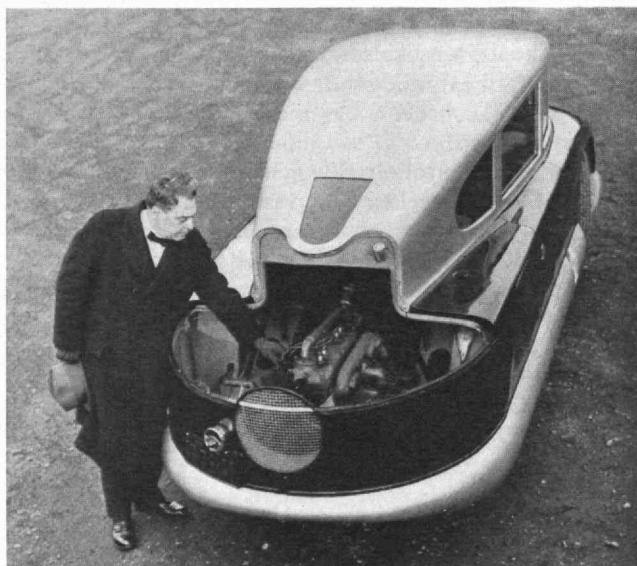
A careful examination of the facts demonstrates how fabulous most of these contentions really are. Matthews, in his "Textile Fibers" (page 785), sums up the case

of ramie admirably when he says: "Though ramie has many excellent qualities to recommend it as a textile fiber for definite uses, nevertheless, it lacks the elasticity of wool and silk and the flexibility of cotton. As a result, it yields harsher fabric, which has not the softness of cotton. Owing to its smooth and regular surface, it is difficult to spin to fine counts, as the fibers lack cohesion and will not adhere well to each other. The ramie fiber also resists the action of chemicals perhaps better than any other vegetable fiber; it has a high luster, being more glossy than jute; it is also firmer in quality than hemp. The specific gravity of ramie yarn is less than that of linen in about the ratio of six to ten; on the other hand, ramie yarn is denser than cotton in the ratio of about six to five.

"One of the principal uses of the ramie fiber at present is for making yarns used in the manufacture of gas mantle fabric, for which it is the most suitable material

yet found, giving stronger and more resilient mantles than any other material. . . . It has been suggested as a substitute for linen, but as cloth made from ramie tends to crack when folded, it would not be a suitable substitute in linen collars and cuffs, and it is also doubtful if it would wear well in tablecloths or similar articles."

The porosity of ramie fabrics, a result of the smoothness and straightness of the fiber, received recently a somewhat costly demonstration when it was made up into sails for a racing yacht. It was found that the wind blew blithely through the ramie sail cloth, and the experimenters ended by dumping it into the sea. Its extreme brittleness (nearly equal to asbestos) was demonstrated with considerable embarrassment by a



Keystone

*Streamlined car constructed by Captain J. V. Martin, airplane manufacturer. It is four passenger, has an overall length of 126 inches, a wheel base of 61 inches, a reputed top speed of 110 miles and a gasoline consumption of 45 miles to the gallon*

man who ventured out in trousers made of the material. An examination of the internal structure of ramie fiber has been made in the textile microscopy laboratory here at M. I. T. by Professor E. R. Schwarz, which reveals why the fiber presents these difficulties. A longitudinal view of the fiber taken by polarized light shows the presence of internal breaks in the fiber structure which undoubtedly account for some of the characteristics listed above. A cross-sectional view shows pronounced internal fissures. The fibers are usually about 80 microns in diameter, about four times the average diameter of cotton fiber.

### Ultraviolet Reflector

IT has been demonstrated that aluminum, with the proper surface treatment, reflects ultraviolet light better than any other metal. Thus is another and highly useful quality ascribed to this admirable metal, the attributes of which already are so profitably varied.

The proper way to treat the surface of aluminum to give it the best reflecting characteristics has been the subject of investigations carried on by the General Electric Lighting Research Laboratory and the Aluminum Company of America. This research has shown that the best reflecting surfaces are produced on pure aluminum and on sheet of commercial purity designated as 2S. An etched or "frosted" finish increases the reflectivity for both visible and ultraviolet light, and so it has been found expedient to determine the best way to etch for maximum reflectivity. Etching with sodium hydroxide and sodium fluoride followed by nitric acid has been found effective as well as treatment with hydrofluoric and nitric acids.

The use of this treated aluminum is bound to become widespread if the most efficient use is to be made of ultraviolet radiation. Many materials which transmit or reflect visible light efficiently absorb a large portion of the biologically effective ultraviolet.

Nature used commendable foresight in choosing aluminum as the best metal for reflecting ultraviolet. It is conveniently adaptable for use in lighting fixtures, being light, easily worked, and affording excellent opportunities for ornamental treatment. Furthermore it retains its reflecting luster tenaciously.

### Aluminum Foil Insulation

IN yet another field aluminum scores a bull's-eye. When polished brightly the metal reflects about 95% of the radiant heat falling upon its surface and it retains this high heat reflectivity after long exposure to the atmosphere even at high temperatures.

For insulation purposes it is used in the form of foil, approximately .0003 inches in thickness. Layers of this foil with air spaces between ("Alfol" is the trade name of this type of insulation) are applied over the surface to be insulated. Generally, crumpled foil is used, which provides its own spaces with a minimum of contacts.

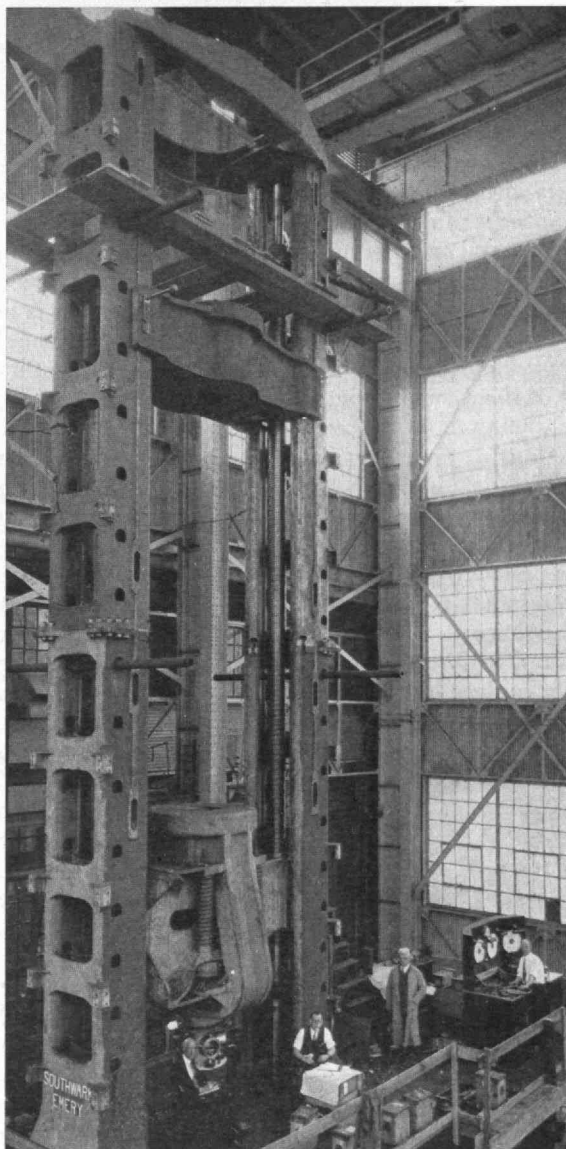
The insulation value of air spaces bounded by bright metallic surfaces was suggested as early as 1850 by Peclet, but the idea was not followed up because the metals employed, such as copper, silver, and tin, tarnished and were too heavy. Aluminum, however, is ideal, a fact originally recognized in Germany and lately demonstrated by Professor Gordon B. Wilkes, '11, in a long series of experiments at M. I. T.

Among its advantages over other forms of insulation may be listed the following:

**LIGHTNESS.** A cubic foot of aluminum foil insulation weighs three ounces as compared with ten pounds for cork and 17 pounds for magnesia. The French liner, *L'Atlantique*, is using about four tons of Alfol insulation on equipment which would have required 380 tons of cork and magnesia to give equal insulating efficiency. The United States Navy is specifying it for new vessels.

**THERMAL EFFICIENCY.** Exponents of the new insulation present data which indicate that crumpled foil is at least equal to cork at low temperatures and is even better than magnesia at high temperatures.

**LOW HEAT STORAGE.** Alfol is advantageously used on equipment which is intermittently operated because it saves time in permitting the desired temperature to be



World's largest testing machine built for the University of California. It is able to test columns up to 33' 6" long in compression and up to 4,000,000 lbs. load. In tension it accepts specimens up to 33' 6" diminished by machine stroke and will apply loads up to 3,000,000 lbs.

Baldwin-Southwark Corporation



obtained and eliminates energy losses occurring in heating up and cooling off. Many bake ovens in Germany use aluminum foil insulation for this reason.

**STRENGTH.** The foil is vermin proof, is resistant to most industrial fumes and vapors, and melts above 1,200° F. It will withstand vibration to a remarkable degree, a factor increasing its value for use on board ships, in railway cars, and in trucks. The thin metal foil will support more than a mile of its own weight.

**IMPERMEABILITY.** It is impermeable to moisture and, should condensation occur on the outer layers, it is not retained.

From these qualities, it is evident that aluminum foil has widespread uses which include insulation of pipe lines, tank cars, household refrigerators, refrigerator cars, ships, water and oil tanks, and refrigerated rooms of meat and fish industries. Modern houses built in Germany have outer walls of copper and sheet steel with two inches of Alfol insulation. Among its disadvantages may be mentioned the necessity of encasing it with metal or other material. It will not stand alone as will cork, for instance. The surface of the foil must be kept bright.

The fact that a shining surface impedes radiation loss may be a justification of grandmothers who insisted upon burnishing the outsides of their cooking pots.

### Zirconium in Gems and Steel

**T**HE fact that the United States is dependent upon foreign sources for the great quantities of manganese used in making steels, indicates the importance of a new steel in which the mineral zirconium is employed as a substitute for manganese.

Although manganese is found in North America, it is not available commercially and could be produced only at great expense. The world's present sources, ac-



*Suggestion for elevated roadways in New York to which are connected observation platforms constructed over the roofs of the river piers*

*Designed by Charles R. Lamb*

cording to Dr. George B. Waterhouse of the Department of Mining and Metallurgy, are the mines of Southern Russia, Brazil, and Africa, where it is found on the Gold Coast and more recently in South Africa. Cuba also has deposits of the mineral, and in the future may become an important source of supply.

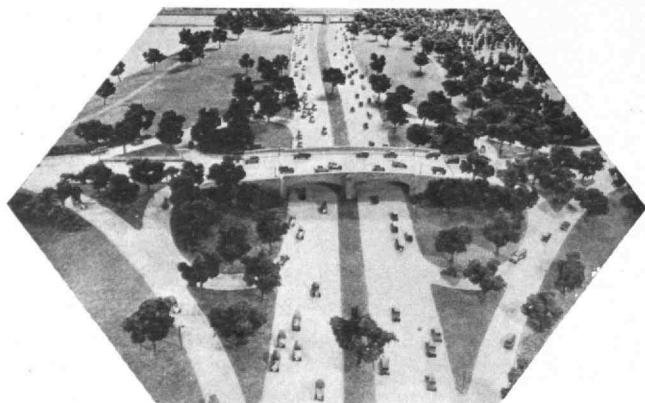
Manganese is used as a deoxidizing agent and gives strength and toughness to the steels in which it is incorporated. It enters into all ordinary steels. Manganese steels are used in making various parts of automobiles, particularly axles and springs, and for special bolts, steam valves, armor-piercing shells, gun tubes, and many other products.

In investigations carried on at the United States Arsenal at Watertown, Mass., it was found that zirconium could be satisfactorily employed as a substitute for manganese in the manufacture of large steel castings for cannon. Another important development in this field is the work of the research staff of the Union Carbide and Carbon Research Laboratories in zirconium alloys.

Zirconium was first identified in zircon, a mineral composed of zirconium silicates, and in some varieties is used for gems. This mineral, Number 40 in the periodic table of elements, was first isolated by J. S. Berzelius in 1824. Zirconium is an ordinary constituent of many rocks, and the commercially important zirconium minerals are zirconia and zirkelite, found in great quantities in Brazil, and zircon, which is mined in Colorado.

The form of zircon used as a gem stone is found in Ceylon, Siam, and New South Wales. It occurs in colors of brown, orange, red, yellow, green, and blue. The "Matura diamonds" of Ceylon are zircons which have been artificially decolorized. When heated, some of these stones glow with an orange incandescence, while others, when ground on a copper wheel with diamond dust, emit a yellow glow.

Zircon of the gem stone variety is sometimes called the "noble" or "precious zircon." The red and orange stones bear the names hyacinth and jacinth, and



*Bureau of Public Roads*

*A model of the grade separation plan at the point where the new Mt. Vernon highway is to intersect U. S. Highway No. 1, Washington. The system of ramps will permit the distribution of traffic at all directions without left turns or cross traffic*

the latter is mentioned in the Bible. The colorless, transparent pieces are known in the Far East as "jargoons."

### Chemistry Since 1891

IN a paper recently delivered before a private group, Salmon W. Wilder, Chairman of the Board of the Merrimac Chemical Company, gave an excellent survey of the development of chemical engineering in the United States.

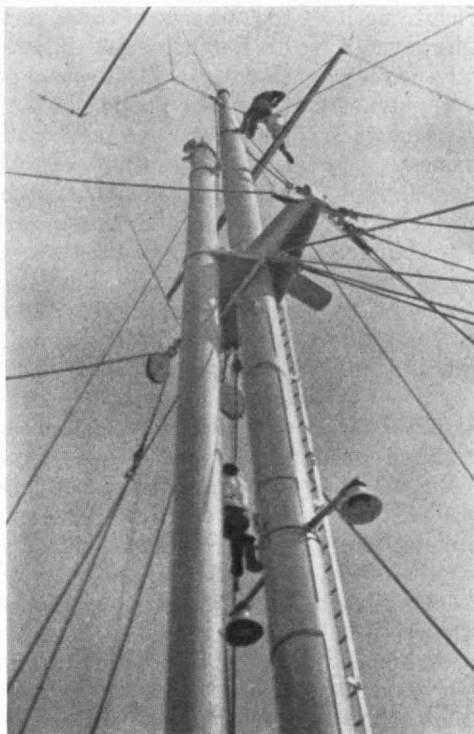
His career as a chemist and an executive has run concurrently with the development of chemical engineering. He received his degree from the Institute in 1891 with the first small group of chemical engineers to be graduated in this country.

"In 1891," said Mr. Wilder, "chemistry was already an important course at Technology. For 20 years or more great progress had been made in industrial chemistry, and at the time of our graduation, the opinion was often expressed that a rate of progress such as had taken place during the previous years could hardly be expected to continue.

"Now, however, it is easy to look back and realize that in 1891 we had merely scratched the surface so far as chemical development is concerned, and what is true of chemistry applies in a measure to all branches of scientific work. . . .

"Even then, however, many executives of the old school, practical men, thoroughly trained and of sound judgment, began to realize that chemists and scientifically trained men were not always theorists, and if kept in their proper places and not given too free a hand, might be, and oftentimes were, really worth while; nevertheless, in concerns whose staffs boasted a chemist, it was often difficult for the latter to convince the management of his company that a chemist could effect savings, not only in processes of manufacture, but also in the purchase of raw materials. It was no small task for him to induce the proper executives to make purchases based upon specifications, rather than some trade name; in fact, one job for the chemist or chemical engineer was to 'sell himself' to his associates. . . .

"I have mentioned that 40 years ago chemistry, as an essential science, was firmly established in this country, and at Technology our course of instruction was comprehensive and thorough; nevertheless, it was recognized that in the domain of chemistry, both theoretical and applied, leadership was to be found abroad, and students seeking a graduate course or a doctor's degree as a rule entered one of the German, or possibly Swiss, universities or technical schools.



Joseph Dauber

"There was, of course, a reason for Germany's commanding position, and you are all aware of the fact that although aniline dyes were discovered by Perkin in England, the development of their manufacture and the establishment of a real organic chemical industry took place in Germany. Moreover, the Germans, early grasping the importance of this new industry, bent every effort to the training of youth in their universities, so that the chemical and other industries requiring men with a fundamental knowledge of chemistry, should not lack for good material.

"The above facts are well known, but I do not think it is quite so fully recognized that chemical engineering is really an American institution, and in fact, our own M. I. T. may claim the credit for creating such a course, one that today is acknowledged to be of ranking importance in our scientific curriculum.

"I recall clearly that during my senior year, Dr. Lunge, who was then head of the Department of Industrial Chemistry in the Federal Polytechnic at Zürich, Switzerland, visited this country and spent some time at Technology. Dr. Lunge was recognized as the foremost authority on sulphuric acid, and the great Swiss Polytechnic attracted students from all parts of the world. After a careful investigation of our course in chemical engineering, he was so impressed by the character of the work required that in the following year he was willing to accept one of our students as a candidate for a doctor's degree at Zürich, and without the customary examinations. This, I believe, was a most unusual, if not unique, instance at that time.

"Ten years later I happened to visit Dr. Lunge at Zürich, and in the course of conversation he recalled his Boston visit and told me, with a good deal of enthusiasm, that one of the most fruitful results of his trip to our country in 1891 was the opportunity to study the newly established course in chemical engineering, the essential features of which had been adopted in a similar course at the Federal Polytechnic. Here is one instance, at any rate, in which M. I. T. took the lead, and at a time when foreign universities were, as a rule, recognized as being much farther advanced in every branch of science, both theoretical and applied, than those in our own country.

"During the decade ending about 1900, so far as economic development along scientific lines is concerned, this country was passing through a transition period. In many industries, established processes were adhered to regardless of their unscientific character. This is not altogether surprising, for one can readily appreciate the reluctance of a manager or superintendent to switch from a thoroughly understood process to an untried one. As an example, let us consider leather. Many of the formulas and methods employed in tanneries had been in use for decades; the final products were known to be absolutely dependable, not alone in appearance, but

in every essential quality, such, for instance, as strength and extreme durability. With a new process, however, a few shipments of finished material, apparently perfect, but which later on proved to be defective, might not only result in direct claims, but seriously affect the maker's reputation and jeopardize future business.

"With the Twentieth Century, our economic and industrial life entered upon a new era, that of electric power transmission and the long-distance telephone, of the automobile and electrochemistry, of high pressures and temperatures. A new structure was being framed, the foundations of which were laid, in part, at any rate, by the biologist, chemist, physicist, and electrical engineer. . . .

"During the year 1914, but prior to the outbreak of the War, business was at a low ebb, competition keen, and overproduction evident in many lines. The chemical industry was no exception to the general rule, and for some time potential capacity had been greater than actual consumption requirements. This had served to check new construction and plant extension. With the advent of war, however, the scene shifted. I will not attempt to outline the changes that were brought about in the chemical industry, but it soon became evident that the chemist must play an all-important part in the War, and indeed that, in a large measure, the maintenance of our industrial integrity depended upon our chemical manufacturers. Very soon the shortage of dyes and other organic products became acute, and in an endeavor to cope with this condition, our chemical works were taxed to the limit. Never had there been such a demand for chemists and skilled technical men.

"Following the sudden and tremendous demand for dyes and pharmaceuticals, came an even more imperative one for high explosives and the intermediates employed in their manufacture. The truth of the matter is that not only our own economic salvation, but the outcome of the war depended upon the ability of American chemists to meet this critical situation.

"Finally, in 1917, we ourselves were drawn into the conflict and in due course practically the entire output of American chemical works was employed, directly and indirectly, either in the manufacture of explosives and munitions, or those materials essential to the conduct of the War. I wish that I could give you a word picture of some of our own experiences during this critical period, but space is limited.

"As a result of the situation just outlined, a new chemical industry sprang into being and existing works were largely expanded. Many new plants were built, some of them for purely governmental purposes. Scores of millions of dollars were invested in buildings and equipment, much of which was designed to meet emergency requirements. During the War the slogan was 'Production,' and very often economy and efficiency were sacrificed in order to secure output. Selling prices became matters of secondary importance and in many cases products were commandeered by the Government.

"Looking back, it is difficult to realize the conditions existing in the chemical industry shortly after our entrance into the War. All honor to the men, and women,

too, who were 'over there,' but the strain was terrific here at home for those engaged in the manufacture of chemicals. There was a period of about two years when the major portion of the output of my own company's plants was required, not only in the making of explosives, but in nearly every branch of industry, and knowledge of the fact that any catastrophe at our works would result in the almost complete closing down of New England industries was a responsibility that one could never lay aside. Thus it came about that when the Armistice was signed, the chemical industry found itself in an extraordinary position. For example, the annual output of sulphuric acid — the most important of all chemical products — had increased from approximately 4,000,000 to more than 9,000,000 tons, and huge stocks of acids and other chemicals used in the manufacture of munitions were on hand and in process. For a time, conditions were demoralized and the market values of many commodities dropped to levels far below the cost of production. This was followed by a period of intense activity, and then came one of reconstruction and adjustment; labor was scarce and wages high — very different from the situation that now prevails. Then, too, industry was out of balance; in the case of some commodities a surplus existed, whereas in others there was an actual shortage. Lack of knowledge, or judgment, as to the real situation, together with wildcat development in some lines of production were in part responsible for this state of affairs. Exaggerated ideas as to the possibilities in chemical development were readily accepted by thoughtless investors, and many abandoned plants bear witness to this fact. On the whole, however, we may survey with pride the results accomplished by American chemists and chemical engineers during and since the War, and I do not know of any better evidence that could be presented than the fact that today this country is entirely independent so far as chemical products are concerned. This statement applies to organic, as well as inorganic, chemicals, and it is a satisfaction to know that American manufacturers now supply more than 90% of the country's entire requirements of dyestuffs, pharmaceuticals, photographic and fine chemicals. . . .

"Without doubt we are now in the midst of a depression greater, at any rate, than any that have occurred during my business career, and furthermore, the condition is not a local one, but world-wide; nevertheless, chemists and chemical engineers are pushing their research work more vigorously than ever, and this alone gives us reason to believe that the outlook for further advance in civilization and future prosperity was never brighter than at the present time. In less than 15 years, the initiative in scientific research has passed, in considerable measure, from Germany to this country, and this is a fact of far-reaching significance.

"As a result of applied chemical research, a few essential raw materials are now made to yield a host of useful products, and from the many developments of recent years, the following examples will serve to illustrate what I have in mind:

"Take cellulose, for example, either cotton or wood. From this, as a raw material, are derived the Duco type of lacquers that very largely have taken the place



of paints and varnishes. This is an American development that has spread throughout the world. From the same materials we also make rayon, celanese, and cellophane — the latter a distinctly American product.

"From petroleum and natural gas we are now able to produce a long line of synthetic products, such, for example, as Prestone (ethylene glycol), various alcohols, including the familiar ethyl alcohol, which is at once so useful and yet the cause of much distress and suffering.

"With new high-pressure methods of treatment, gasoline yields have been increased twofold, and furthermore, research has proved that a few drops of a virtually unknown compound, when added to a gallon of gasoline, entirely changes its characteristics, and today tetra-ethyl lead makes possible the design of an engine smoother in operation and with greater fuel mileage than ever before.

"With coal and air as raw materials, and with processes operating at high pressures, we are now making ammonia, nitric acid, and fertilizer materials.

"In metallurgy, the use of corrosion-resisting materials is revolutionizing industrial and building operations, and a conspicuous illustration is found in the development of chromium plating, an American contribution to the art of electroplating.

"In the rubber industry, chemical accelerators and retarders have revolutionized vulcanization processes and made possible products of a quality never dreamed of before. In tire consumption alone, researches of the past decade have saved automobile users millions of dollars and eliminated much of the difficulty in operating pneumatic tires.

"New drugs and new anæsthetics are among the contributions to the field of medicine and surgery; sunfast and laundry-proof dyes are now available for every type of textile product, and so on down a list which could be extended indefinitely.

"This is an age of progress, in which 'the glory of the heavens is being disclosed, and the structure of the atom and the molecule laid bare.' Mindful of these blessings, and with ever-increasing knowledge, we may face the future with confidence and the assurance of revelations to come that are beyond the scope of our imagination."

### *New Cure For Rickets*

THE development of a new cure for rickets by means of synthetic, organic peroxides was announced on February 14 by Professor John W. M. Bunker at a Society of Arts popular science lecture.

These new compounds, which can be prepared in any laboratory and from a variety of chemicals, were the result of joint research by Professor Bunker and Robert S. Harris, '28, both of the Institute's Department of Biology and Public Health, and Dr. Nicholas A. Milas, of the Research Laboratory of Organic Chemistry.

These antirachitic and synthetic substances are entirely different from cod liver oil, containing no oils at all, and they have no relation to ultraviolet light. They are compounds which have in common a particular chemical grouping of oxygen which is believed to be the secret of their power to cure rickets.

## TRANSATLANTIC

### *By the River Cam*

**H**ORA Novissima, Tempora Pessima. The economic world is doing its best to emulate the expanding universe now so much in fashion among the astronomers, and to blow up. In plain language, the period of depression on which we are now entering is getting more firmly entrenched every day, and there are no signs of any attack competent to dislodge it.

In England the situation is not too bad. There is still a great deal of accumulated wealth available for emergency purposes, and on the other hand there has been enough adversity since the War to cause the people to look economic facts in the face, and to take measures, such as the dole, which are disagreeable but necessary. Czechoslovakia is making a fair go of it under French patronage. In Germany, and to a lesser extent in Austria, the situation appears in all its stark hopelessness. The inflation period of 1922-24 bled the middle class white, and Germany is facing the depression without reserves. The country is economically dead on its feet. The people are divided into the declared bankrupt, and those who are insolvent, but not yet petitioned into bankruptcy, owing to the futility of trying to collect money where there is no money. The country may go Hitlerite without any belief in Hitler, or Communist without any faith in Communism, simply out of pure despair. Anyone with the slightest sense for facts realizes that the reparations are dead, and with them the war debts, that we never can collect another cent from Europe, and that it will simply add to the universal depression and hopelessness if we try. Remitting the debts and reparations will be very far from bringing immediate prosperity; collecting them or trying to collect them will bring bottomless chaos.

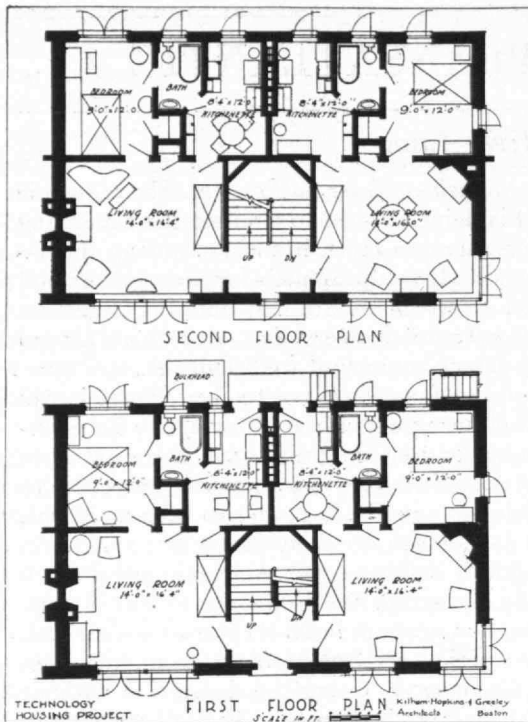
The most surprising thing about the whole business is the appalling ignorance in each country of the state of affairs in all the others. The Englishman has but the most shadowy idea of the German depression; the German is utterly at a loss to understand the Englishman; the American is chiefly interested in crawling into a hole and pulling the hole in after him; and the Frenchman knows and cares nothing about any of the rest. Meanwhile the economic entropy keeps increasing.

I have lectured at Prague, Leipzig, and Berlin. The lecture at Prague was at the German University, but the Czechs came around to the talk, though they did not stay for the Nachsitzung at a café. The split of the intellectual life into two camps that do not approach closer than a somewhat stiff neutrality is ruinous. The Germans form almost a quarter of the population of the country, but in Prague, where they have their university, they represent only a twentieth of the population. Thus the German university is to a certain extent exotic, while the Czech university is hampered by not being able to draw on some of the best talent in the country. The mathematics and physics people at neither university are chauvinistic, but the work cannot help suffering from the general situation. (Continued on page 267)

# HOUSING MARRIED

## *A Proposal to Provide Inexpensive*

*THE lack of any convenient and coördinated arrangement for the housing of the instructing staff is well recognized as a handicap to effective work and to the maintenance of that esprit de corps essential to enthusiastic coöperative effort. In fact, the lack of convenient, moderate-priced housing facilities offers a really serious obstacle to securing the services of younger members of the staff. For these reasons, the adoption of some such plan as that*

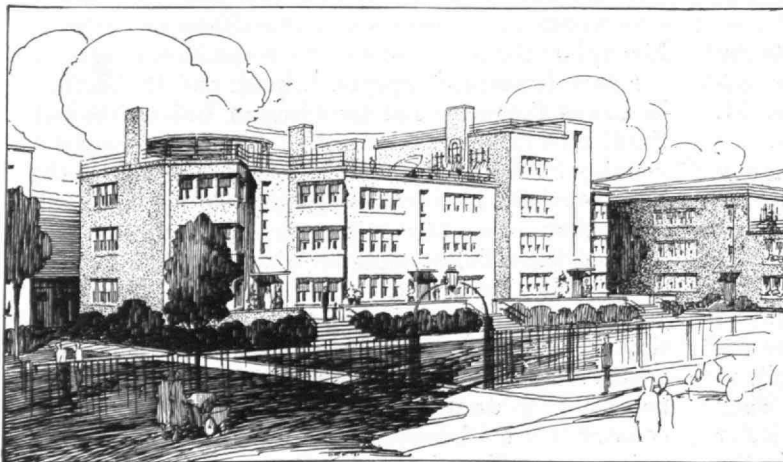


*Layout of apartments in proposed housing development*

**R**ECOGNIZING the recent definite trend toward a larger group of graduate students at M. I. T., and the living problems of some of the instructing staff, a number of Alumni have become interested in the possibilities of better housing for these groups.\*

The short terms of residence, which are the rule with graduate students, render social adjustment and general living conditions particularly difficult, especially if the students are married and possibly have young children. Whereas this problem is difficult no matter where a school may be located, it is particularly difficult at the Institute. The present housing facilities are limited to a few apartments on Memorial Drive with no further opportunities until the industrial belt of Cambridge is

\* This article is sponsored by a group of interested Alumni, including Walter H. Kilham, '89; George L. Gilmore, '90; Merton L. Emerson, '04; and H. Whittemore Brown, '15. Mr. Kilham's office (Kilham, Hopkins and Greeley) executed the drawings.



*A view in central court in housing project*

traversed, which brings one practically to Harvard Square, where facilities are largely absorbed by Harvard University.

Housing facilities on the Boston side of the Charles River, while perhaps ample, are expensive and often beyond the means of the graduate student or instructor. The vacant land on the westerly side of Massachusetts Avenue now owned by the Institute, some of which faces directly on Memorial Drive, presents a desirable site for a housing development.

Of course, it is likely and altogether desirable that plans for permanent buildings on this site will be visualized at an early date; but it is probable that buildings on the waterfront may be the last to be constructed, since they would undoubtedly be the most permanent and monumental of the group. On the other hand, the present trend of construction on land fronting on Memorial Drive and not owned by the Institute is of a semi-permanent nature and points to the possibility of utilizing this land in the meantime for residential purposes.

It is with this thought in mind that a group of M. I. T. Alumni have been considering in some detail the possibility of erecting apartments on a portion of the waterfront land owned by the Institute, having in mind that over a period of 25 or 50 years, these residential buildings will be replaced by more monumental, educational buildings.

In view of the possible limited life of the buildings outlined above, the construction methods must be as economical as possible. Nevertheless, the present trend in building construction indicates that such a group as is contemplated for this development can be built of fireproof construction at a very reasonable figure. In fact, consideration of insurance rates, safety features, and maintenance charges for a life of 25 to 50 years indicates that the slight additional expense of first-class construction is more than warranted.

Again, any buildings which might be erected on this site under the auspices of the Institute or its Alumni should be of the most up-to-date and useful apartment house construction. The adaptability of modern architectural expression to fireproof construction is also another potent argument for building better than the usual tendency of speculative builders, wherein there is

# GRADUATE STUDENTS

## *Apartments for Their Families*

*described in the following article would be of definite benefit to the Institute. While the Institute does not have funds available for the financing of this housing plan, the Executive Committee will consider the possibility of assisting in its realization through a lease of suitable vacant land for a period of years if sufficient support can be obtained for the plan.*

KARL T. COMPTON

little attempt to make the appearance anything but extremely cheap and ordinary. Modern architecture enables the architect to design a very attractive group of apartments three stories in height, together with some two stories and some four for proper group effect, together with solariums and roof gardens, which would be useful supplements to the accommodations of the apartments themselves through the possibilities of nursery schools, play rooms, and the like.

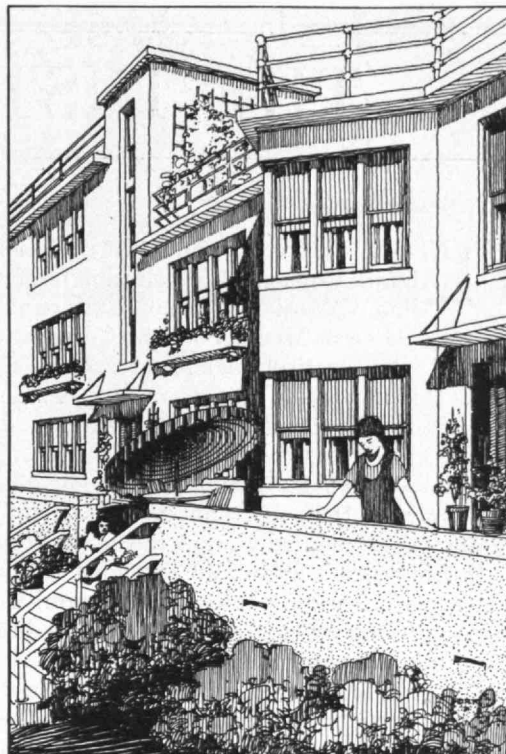
The proposed site facing Memorial Drive is ideal for this purpose and it is possible to give all apartments a view over the river, together with ample light and air on the other sides. There is also sufficient room for lawn and play space around the group.

A study of the accommodations for apartments for graduate students seems to indicate that a majority prefer limited accommodations at a very reasonable cost, which can be best provided in the combination of a good-sized living room with a small bedroom and combined kitchenette and dining alcove. This plan was the most generally acceptable of those used by the Harvard Housing Trust, where conditions were somewhat similar.

The accompanying plans indicate in a general way the scheme which is under consideration. It will be noted that the living room which is 14 x 16 feet, with large windows taking advantage of the excellent view, contains a fireplace, coat closet, and plenty of room for a davenport, small grand piano, chairs and tables. The bedroom and bath make a practical unit, and are provided with good closet space. The kitchenette, arranged with gas stove, automatic refrigeration, and ample cabinet space on either wall, together with the adjacent dining alcove, provide a desirable unit for this phase of housekeeping. It is also interesting to note that by virtue of the passage through the bath, it is possible to go from the kitchen to the bedroom without passing through the living room, a point which will be much appreciated by the housewife.

Heat, hot water, and electricity are amply provided for by central plants in this group or from the Institute power plant, providing economies in those large items of operating expense.

Provision is also contemplated for a number of garages.



*Terrace on the front side*

Through economies in construction, financing, maintenance, and operation, it is believed that it is entirely feasible to construct these apartments and rent them to graduate students and young married instructors at a figure considerably lower than would be possible under private ownership and operation. A recent survey indicates that a large number exist among this group who would be interested in the project. Whereas it is difficult to foresee conditions at the Institute 25 or 50 years hence, it is quite evident that the present trend toward graduate education is increasing rather than decreasing, so that the problem of proper accommodations for this group of men and their families would seem to be one of increasing importance and one that warrants careful consideration on the part of the Institute authorities and the Alumni in general who are interested in the progress of the Institute.



*Fireplace in solarium; a commons room on the roof*



# THE INSTITUTE GAZETTE

## Alumni Nominations

ONE of the most important functions of the Alumni Council is the selection of officers of the Alumni Association and of the slate of candidates from which Term Members of the Corporation may be selected. By constitutional provision, the Council entrusts this important duty to one of its standing committees, the Committee on Nominations. This group of nine men annually submits to the Alumni body one candidate for each Alumni Association office and, in recent years, three candidates for each of the three vacancies that annually occur in the Corporation.

As Alumni are aware, an extended study has been under way of various phases of the Alumni Association's work, particularly that of Term Membership selection, and a questionnaire soliciting the opinion of all Alumni was distributed last summer to furnish data for this study. It was, therefore, appropriate when the Nominating Committee this year began its deliberations that it give heed to the results of this questionnaire. This it did, with the result that the following recommendation was prepared and submitted to the Council and was unanimously accepted by that body:

"WHEREAS it is evident from the report on the recent expression of Alumni opinion that it is the desire of Alumni that the number of candidates for Term Membership on the Institute Corporation as submitted to them for nomination should be reduced to three, and since this wish can be fulfilled under the present By-Laws by a vote of the Council to replace previous votes concerning nomination of Term Members.

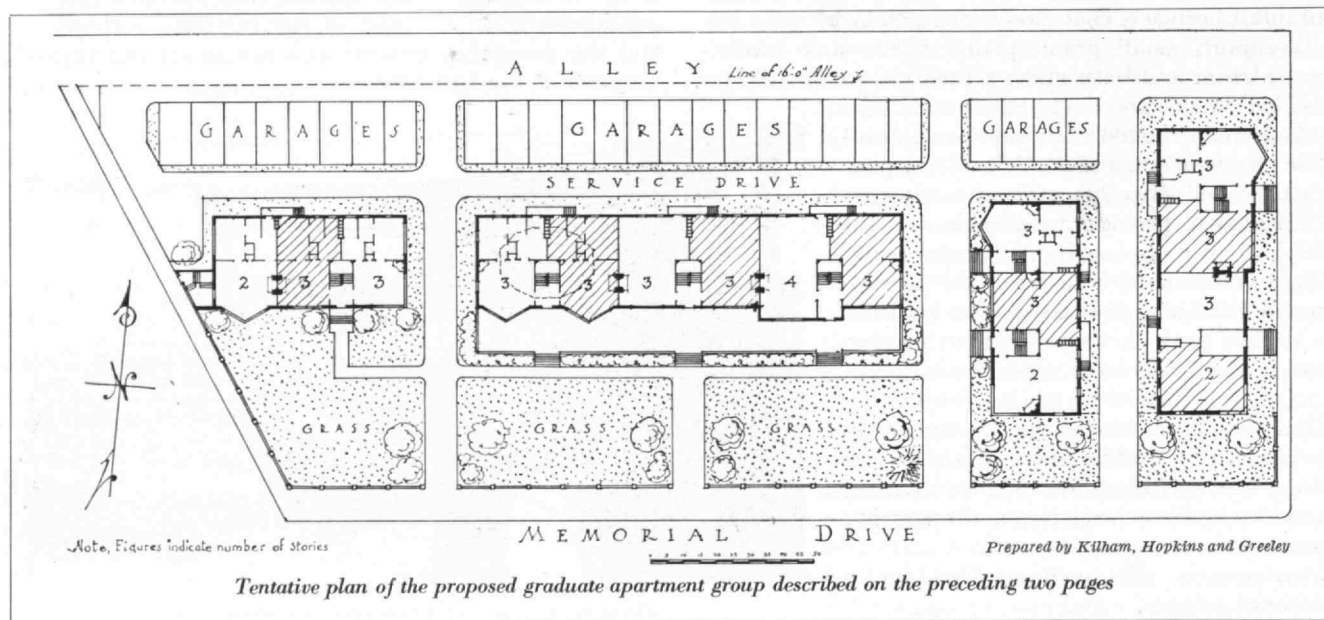
"BE IT RESOLVED: That in submitting names to the Alumni for nomination for Term Membership on the Institute Corporation the Nominating Committee of

the Alumni Association be instructed in accordance with the By-Laws of the Association to nominate at least one candidate for each vacancy and until it is otherwise voted, to limit the number to one candidate, and further that previous votes contrary to this resolution be and hereby are revoked."

The acceptance of this recommendation left the Committee with the responsibility of nominating the three men who will fill the three vacancies that will occur on the Corporation when Messrs. William Z. Ripley, '90, Elisha Lee, '92, and Roger W. Babson, '98, conclude their five-year terms on June 30.

After considering several hundred names, the Committee unanimously nominated M. Herbert Eisenhart, '07, Vice-President of the Bausch and Lomb Optical Company of Rochester, N. Y.; Bradley Dewey, '09, President of the Dewey and Almy Chemical Company of Cambridge and for the current year President of the Alumni Association; and Jerome C. Hunsaker, '12, who established Technology's first subjects in aeronautical engineering and is now Vice-President of the Goodyear-Zeppelin Corporation of New York and Akron. When the ballot is mailed out to Alumni in March, these three names will be presented for the ratification of the Alumni electorate, and then in turn presented to the Corporation for formal election, that body invariably accepting the nominations of the Alumni Association.

On the same ballot will be included the other nominations made by the Committee on Nominations and approved by the Alumni Council. Chief among these is Allan W. Rowe, '01, to succeed Bradley Dewey, '09, as President of the Alumni Association. Dr. Rowe is Chief of Research at the Evans Memorial of the Massachusetts Memorial Hospitals and Professor of Physiological Chemistry in the Boston University





#### NOMINATED FOR TERM MEMBERSHIP ON THE CORPORATION

From Left to Right: M. Herbert Eisenhart, '07; Bradley Dewey, '09; and Jerome C. Hunsaker, '12

School of Medicine. He is Secretary of his Class and for many years has been a member of the Advisory Council on Athletics and its Secretary-Treasurer since the retirement of the late Major Frank H. Briggs, '81. In this latter group, he has been the patron saint of Technology's undergraduate athletics, and in their behalf he has worked unflinchingly and to their great advantage.

In Alumni Association affairs, he has participated perhaps to a greater extent than almost any other Technology alumnus. He is a former member of the Executive Committee and at the present time a member of the Committee on Assemblies, on Housing Undergraduate Publications, on Audit and Budget, on Nominations for Advisory Councils, and on Alumni Association Reorganization. To pile Pelion on Ossa, he is also a member of the Alumni Advisory Council on the Boathouse.

To be Vice-President of the Alumni Association for two years, the Nominating Committee selected Harrison P. Eddy, Jr., '17, partner of Metcalf and Eddy, Boston; and to serve on the Executive Committee for two years, Marshall B. Dalton, '15, Vice-President of the Liberty Mutual Insurance Company, Boston; and Charles A. Sawyer, Jr., '02, President of the Sawyer Construction Company, Boston. As representatives at large in the Alumni Council, the Committee selected: Franklin B. Richards, '84, Clarence K. Reiman, '12, George T. Cottle, '98, Ralph H. Sweetser, '92, and Donald W. Southgate, '11.

To all of these nominees The

Review extends felicitations and to the Nominating Committee congratulations for the excellence of its judgment in selecting so notable a slate for both the Corporation and the Alumni Association.

#### Annual Alumni Dinner

IMPELLED by a warm fellowship and by a strong sense of loyalty to what might be better called their *almus pater*, graduates of M. I. T. instituted in 1876 the first Alumni Association Dinner. It was celebrated at Young's, and those of a total Alumni body of 122 who were present elected Robert H. Richards, '68, President of the Association. From then until now that initiatory dinner, with few exceptions, has been repeated yearly and elaborated with a zeal that has suffered no diminution. It has grown to be an outward manifestation of an inner unity between the Institute and its Alumni, an occasion for demonstrating and cultivating a productive interrelationship.

The 1932 dinner, celebrated on February 6 at the Hotel Statler, Boston, was a continuation of this spirit that has run so strongly since 1876. More than 300 Alumni and guests were present, of which about one-third were women. Preceding the dinner itself, a reception was held at which Alumni met administrative officials of the Institute, members of the Executive Committee of the Corporation, and officers of the Alumni Association.



Dr. Allan W. Rowe, '01, sole nominee to the Presidency of the Alumni Association for the year 1932-33

After the dinner, there were two scientific demonstrations and two speeches, in addition to the presentation of honorary membership in the Association to Mrs. Ellen King and a formal accolade to Professor James R. Lambirth.

The first scientific item was in charge of Professor R. D. Bennett and B. E. Warren, '24, of the Department of Electrical Engineering and Physics, respectively, and it consisted of a demonstration of Geiger Counters. These instruments are remarkably sensitive when used as a detector of feeble light beams, of electrons, and of atoms — so sensitive, in fact, that they will register the entrance of the faintest beam of light, a single electron, or a single atom. The counter is essentially a metal vacuum tube, containing a fine wire at the center with a potential difference of about 1,000 volts between the cylinder and the wire. Perhaps the most spectacular part of the demonstration was the loud clicks which were heard by the entire audience and which were produced by the mysterious cosmic rays which scientists are now trying so hard to explain. The second scientific experiment was that of the Van de Graaff 1,500,000-volt generator, which was described at length in *The Review* for December, 1931. The generator was operated and described by Professor Vannevar Bush, '16, and Mr. E. S. Lamar, Research Assistant to President Compton.

Between these two demonstrations, Dr. Rowe, nominee for President of the Alumni Association next year as announced on page 258, spoke on undergraduate activities. He named and briefly described the various organizations which are operated by students, described how Technology athletics are entirely under the management of undergraduates, and apotheosized the attitude at Technology which insists upon the students conducting their own affairs.

President Dewey, who, of course, presided at the dinner, at the beginning of his administration requested that Dr. Compton plan to present an address on the educational policy of the Institute at this dinner. This Dr. Compton did to the great satisfaction of all those who were present. His entire address is printed in this number of *The Review*, beginning on page 242.

After the dinner there was dancing.

### *Peregrinators*

**T**O ANNUAL dinners of Technology clubs in Washington and New York and to regular and extraordinary meetings of Alumni groups in widely separated points such as Montreal, New Orleans, Portland, Maine, and Phoenix, Ariz., reported emissaries of the Institute during December, January, and February. A summation of these visitations suggests a winter of unusual endeavor to inform graduates and former students of the current state of Technology, of its recent past and future aims.

Last autumn Dr. James L. Tryon, Director of Admissions, was carrying out the two months' itinerary, (printed in the October Review) of calls upon university and secondary school officials in the Northwest and on the Pacific Coast. Early in December he traversed the Mohave, crossed the Colorado, to make stops at Phoenix, Tucson, El Paso, Roswell, Albuquerque, Santa Fe, and other Arizonan, Texan, and New Mexican

points. Meanwhile, on December 3, the New York Alumni met concurrently with the American Society of Mechanical Engineers to hear from Professor E. F. Miller, '86, Head of the Department of Mechanical Engineering, Professor Charles E. Locke, '96, Secretary of the Alumni Association, and Major A. S. Smith, Superintendent of Buildings and Power. A week later they reconvened for a seminar (reported in the February Review) on various aspects of modern building construction. It was led by Professor R. F. Tucker, '92, Head of the Course in Building Construction, and his associates, Professor W. C. Voss and L. C. Peskin, '28. On December 15 the Montreal Alumni were addressed by Professor E. H. Schell, '12, Head of the Department of Business and Engineering Administration, and on the last Wednesday of 1931 the New Orleans Alumni had President Compton as their guest.

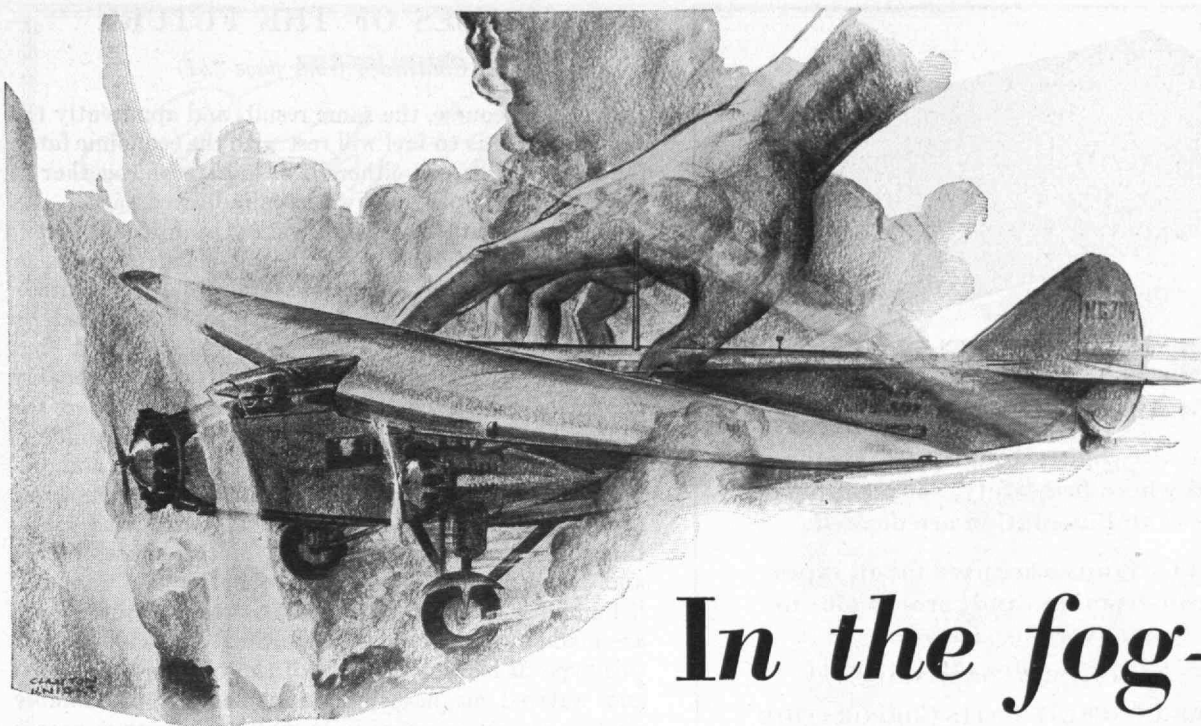
January 15 found Dr. Compton and Professor C. E. Locke, '96, Secretary of the Alumni Association, at Portland, Maine; on January 27 Professor S. C. Prescott, '94, former President of the Alumni Association, visited Cleveland.

Intermediate between the Portland and Detroit meetings came, on January 18, the annual dinner and dance of the Washington Society of the M. I. T., presided over by Professor H. W. Tyler, '84, former Head of the Department of Mathematics and present Secretary of the American Association of University Professors as well as consultant in science for the Library of Congress, and, on the following evening the annual banquet of the Technology Club of New York. At each of these affairs Bursar H. S. Ford, Registrar J. C. MacKinnon, '13, Professor L. F. Hamilton, '14, Chairman of the Dormitory Board, and Dean H. E. Lobdell, '17 — the so-called "Four Horsemen" — spoke, giving in substance the joint report on various phases of the Institute's administration that they first presented to the 154th Meeting of the Alumni Council. A digest of their remarks on the occasion appeared in *The Review* for last December.

At the New York dinner they were introduced by President Compton, after he had been presented by Richard H. Ranger, '11, President of the Club, who acted as toastmaster in the absence of Charles Hayden, '90. This dinner being the first held by the New York Alumni in the new Waldorf-Astoria, the diners were formally welcomed by Lucius Boomer and later in the evening the well-known Oscar added his greetings. Preceding the speaking, the diners were entertained by a demonstration of Mr. Ranger's pipeless organ, the tones being received over a special wire from his home in Newark. The dinner was also notable in that exactly the same number of guests (300+) were present as at the 1931 banquet and because those present witnessed a demonstration of the experimental 1,500,000-volt generator, developed by Dr. Robert J. Van de Graaff of the Institute's Department of Physics. Due to Dr. Van de Graaff's illness the apparatus was described and operated by Dr. Compton.

For February, C. Frank Allen, '72, was to visit Californian clubs and Frank L. Locke, '86, Personnel Director of the Division of Industrial Cooperation and Research, had appointments (*Continued on page 268*)







# In the fog—a GUIDING HAND

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## *Western Electric*

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## HOUSES OF THE FUTURE

(Continued from page 241)

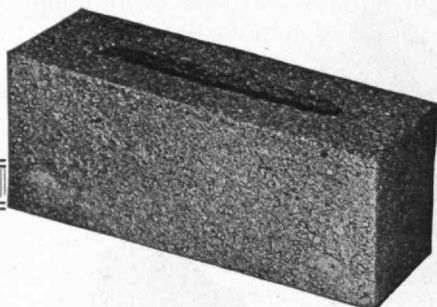
produce, of course, the same result, and apparently the final decision as to fuel will rest with the economic fates. Then the cellar can either be eliminated altogether or devoted to the purposes we have indicated earlier.

The possibility of central heating by a local plant is probably remote except in highly urban districts or in such newly built towns as Radburn or Becontree. New cities on old sites, such as those sketched by Le Corbusier, are fine things to read about but prohibitively costly to produce. Old towns probably cannot afford a central installation. Whatever the source of heat, the country is becoming humidity-conscious. The first development of washed and humidified air will undoubtedly come in the hot air system which has reduced its ducts to an area something less than that of the rest of the house. Steam and hot water systems seem to be on the way out, if humidity is really demanded, unless radical changes are made in their design. The ultimate development of this type of heating consists of the blowing of washed and watered air past individual heaters, presumably electric, placed in every room which will permit proper temperature control in each unit of living space according to the conditions imposed by the room's purpose. Modern thermostatic valves on each radiator will also permit this control. Any humidifying, however, demands double windows or no windows. Unfortunately, despite developments in lighting, which we shall next discuss, we are and will remain rank sentimentalist and are going to like to look outdoors. I am afraid we will have to keep windows as part of the general scheme.

Another type of heating that may or may not be successfully incorporated is that of panel radiation. Considerable experiment has been done on this subject in England and it is now beginning to attract American attention. Radiant panel heating relies on the use of panels set in the walls, or more often in the ceilings, in front of a source of heat, usually either hot water pipes or electric units. The walls may be kept at a temperature of not more than 80° and the room at certainly no more than 60° (50° is regarded as satisfactory in Great Britain). Everyone knows the comfort of radiant heat as given off by a fireplace, but the low temperatures permissible are not generally appreciated. The advantages of this form of heating are the known therapeutic value of radiant energy and the fact that with the permissible low temperature, a higher degree of relative humidity is obtained for the same absolute humidity. It is thus possible that panel heating may be either an adjunct of or a successor to all our present devices.

That is all except one. We are not going to brick up our hearths again. We are giving up a lot of things but that we are going to insist on, as long as there is a piece of furniture to burn. Houses will, of course, be refrigerated in the summer, although the cost at present is exorbitant, and insulated sufficiently to make such refrigeration and heating economically feasible.

Our lighting is as obsolete as it well can be. I dare say there is scarcely a lamp fixture in your house that is not designed as though it were (Continued on page 264)



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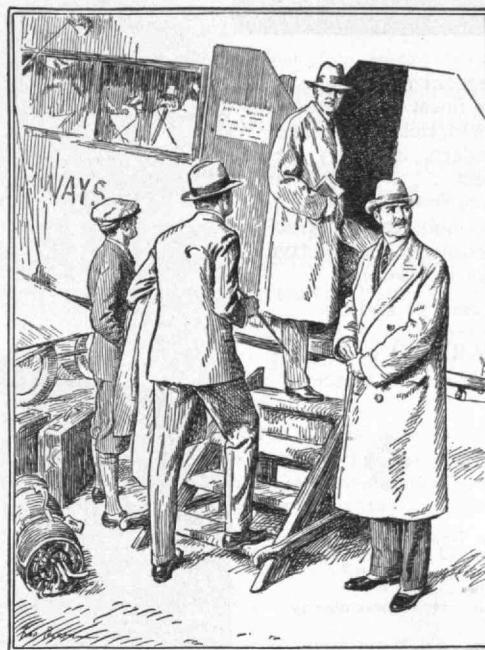
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## HOUSES OF THE FUTURE

(Continued from page 262)

made to hold a candle. We are going to take gas-filled tubes and arrange them all around our rooms in rows of three or four at the cornice level and regulate intensity by the number of tubes we turn on. If we are very emotional, we can even suit the color of our lighting to our mood. Some of these tubes have shown therapeutic value and will help out our ultraviolet ray deficiency. The light will be uniform and diffused and cease straining our eyes. But nobody likes to read in Grand Central Station, and when a man is alone with his pipe and book he is going to need a lamp somewhere around and darkness elsewhere.

Perhaps we will go back to candles as our luxury lighting and use them socially other places than in the dining room. They have an atmosphere that we shall not want to give up. There will, of course, be no base plugs, but, instead, some sort of a strip that permits plugging in of any sort of electrical device anywhere. And ultraviolet windows will probably persist if they improve unless medical science decides that after all ultraviolet is not what we need.

Curiously enough we can do a lot about our sanitation. We can adequately ventilate our water closets. We can throw our rugs in the trash barrel. In the present day, rugs are just as unsanitary as were rushes and rosemary in the days of the Normans. A square inch of rug contains so many bacteria that we do not dare think about it. Good looking rugs, particularly orientals, belong on the walls, the rest can be thrown away. Synthetic cork, rubber, and resin products are less slippery, far cleaner, more durable and only need to have some real study given to their æsthetic expression which so far has been directed to copying tile or what not. When the makers realize they have a material that is intrinsically beautiful, we will gladly use their products on our floors.

Wall treatments will be simpler. Wall paper will be washable or disappear in favor of tinted, fairly smooth-textured plaster, perhaps pre-made. New and better paints will not discolor every time we spill water on them. Metal foil will be used for some finishes and sooner or later taste will tell and we will insist that metal look like metal and not like Circassian walnut; that asbestos cement both become and remain just that and not a cheap imitation of Carrara marble. Baseboards and corners will have to be rounded and undoubtedly moldings, windows, and door frames will be made of metal. The elimination of dust will be much easier and yet we need not have the sensation of living in a hospital.

Our bathrooms have, on the whole, advanced far but we have to do something soon about the slipperiness of our bath tubs which are 1,000 times as dangerous to life and limb per entry as railroad travel and 200 times as dangerous as going around in airplanes. The old tin tub was not so bad but there is possible some compromise between it and slithery porcelain. What we shall do about the color craze no one can predict. Simplicity of taste will in the end dominate because the rest of the house is going to be simple and restful.

The kitchen is the most modern room in the houses today and the best developed. Here chromium, green, white, and black may be used (Concluded on page 265)



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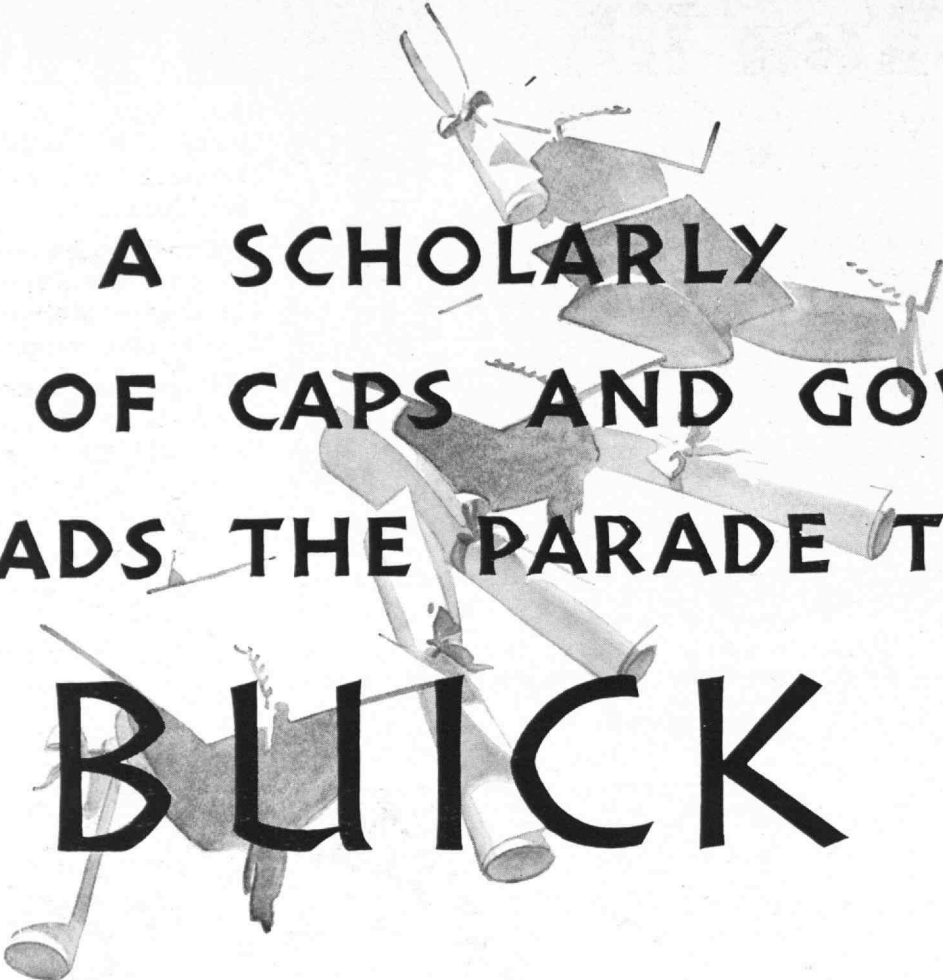


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## HOUSES OF THE FUTURE

(Concluded from page 264)

rectangularly to fine advantage. We have yet to find a machine that combines the myriad offices of dish washers, mixers, laundry machines, and mangles into one, but no doubt that will come. We must make our stoves a lot cooler to work with if we do not want to degenerate further in our food sense. No woman is going to put up with the temperature much longer. Frosted foods already take much less time to cook than fresh ones, and the difference is not noticeable to a nation that does not garnish its diet and is less imaginative gastronomically than any other civilized group (not excluding the English even if they do take their sauces from a bottle). Canned soup does not taste like soup from the old kettle. Baker's bread is not as good as fresh home-baked bread. But we are used to these things and do not mind, and with domestic service on the wane, we may as well face the decadence of cooking with equanimity. It is entirely conceivable that we will have a calidator along with our refrigerator and that the grocery boy will bring hot meats every day packed in the hot equivalent of dry ice. Our eggs, canned soups, coffee, and other minor additions we can make on the little electric devices. But, we hope, the stove will be with us for quite a while yet if only it will be better insulated and ventilated. This can be done quite easily if the kitchen is regarded as a laboratory and the stove provided with a hood similar to that in use at good chemistry benches.

Our houses will have incinerators, less for garbage than for waste paper, the volume of which gets greater every year and threatens to engulf us in its tide as it did Anatole France's philosopher. The elimination of furnace units as we know them will make it imperative that we have chutes into which we can throw the packages and papers for combustion, because no good housewife will let the wood ashes of her hearth be adulterated by a lot of paper ash. It may be a little hard to interest the householder in the chemical reclamation of garbage. There is no scientific reason, however, why, in time to come, the garbage collector may not go away each week with his little cake of urea representing our total spoilage.

Wood will disappear in the kitchen where it assists insects and other vermin to develop. Metal and synthetic plastics are really better for this laboratory function. Metal furniture has a long way to go before it can replace all our wood which will eventually be recognized for what it is — one of the most beautiful materials in the world, to be treated with care, respect, and love. A whole paper could readily be written on new materials to be devoted to old uses.

Such a home will truly represent an evolution. The steps will be gradual and inoffensive to most people. There will, of course, always remain a large class of people reclaiming antique houses and bringing them into line with the advances of a decade ago. These people are kept constantly impoverished by their hobby, but they are very happy. It is unnecessary to say, however, that this type of house and activity does not appeal to Mr. John Q. Averageman.

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## EDUCATIONAL OBJECTIVES AT M. I. T.

(Continued from page 245)

It is inevitable as the country has become more thickly settled, as the natural resources have been more completely explored and exploited, and as the country has rapidly accepted scientific and engineering developments, that competition should increase in all lines. In Europe the competition for desirable positions among technically trained men is much more severe than in this country which is still in its period of rapid development and expansion. Nevertheless, I think that we must inevitably face the fact that competition will become increasingly great so as to lead people to claim that there is an overproduction of men in the engineering profession, just as truly as in the agricultural or medical or any other profession.

The following figures throw some light on the present situation. Up until the time of the depression our graduates as a group found no difficulty in securing positions—in fact, practically all of them had accepted positions even before the time of graduation. During the past two years the situation has not been so favorable. By the time of graduation last June a little less than 50% of our graduating class had secured positions. Up to the present time about 90% of these men have positions. A survey made by the Society for the Promotion of Engineering Education, made during the past summer, showed that at that time about 33% of all graduates of engineering schools of the country had found work.

These facts lead to several interesting conclusions. The first is that up to the time of the depression there was no indication that competition was preventing our graduates from easily securing good positions. Even in the depression our men have fared reasonably well, although it is without doubt true that many have been forced to accept a type of position which would not have been their first or second choice. Since we believe the depression to be a temporary situation, there is no reason for alarm about the placing of our men in the near future.

If, however, we take a look ahead and plan wisely for the future, I think we are forced to conclude that we are steadily and gradually approaching the time in which highly desirable positions will be available only to men of exceptional training and natural ability, whereas men of mediocre attainments will have to be content with humbler positions. I believe that it is this situation which has led to the rapid development of postgraduate training for engineers during the past decade.

With this background I believe that the M. I. T. can face the future with confidence provided that it shapes its policies to meet these gradually changing conditions. It is our desire to continue to be the leading technological institution in the country in leadership, prestige, and service to the engineering, scientific, and architectural professions. In order to maintain this position I believe that the following policies are essential:

- (1) We must maintain an instructing staff consisting of men who are not only inspiring teachers but who are recognized leaders in their professions.
- (2) We must be a center of active pioneer development in extending the field of knowledge and improving the art in our professions. In other words, we must main-

tain a position of intellectual leadership, looking always ahead and anticipating the lines of future development.

(3) We must concentrate our attention and efforts upon students whose natural ability, character and previous preparation are such as to qualify them for positions of leadership in their professions.

(4) We must not admit more students than we can handle advantageously with our limitations of staff and equipment. The ideal situation would be that in which we have just so many students that if we had any more the quality of their training would begin to suffer.

(5) It is important that we should develop more mutually helpful contacts with important industries. Our coöperative courses in electrical manufacture, electrical communications, public utilities, and our practice schools of chemical engineering, have been outstandingly successful and beneficial to the coöperating industries as well as to the students. We know where there are similar opportunities in other fields where real contributions could be made to the development of the industries as well as to an outstanding type of educational training for the students, but which are not being carried out because of lack of financial backing or because of certain conditions within the industries which at present block the way.

It is important that more of the great industries should adopt the far-sighted point of view which a few of them now have, in which they make an investment for the future by contributing financially to the training of experts and the increase of knowledge in the fields in which their development depends.

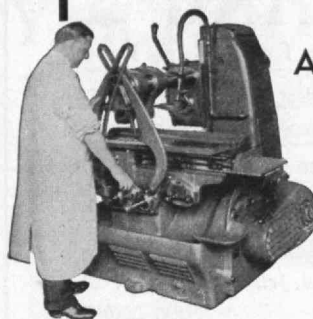
(6) Finally, we must foster all of those contacts which are stimulating to the instructing staff and helpful to our graduates. Such contacts include active participation in the affairs of the learned and professional societies; close and mutually helpful contact with industrial organizations and important problems in the professions; close contact with alumni through alumni officers, clubs, classes, and committees which can assist us by their advice in the selection of students and in the conduct of our teaching work through their practical experience, in the raising of funds necessary to carry out important projects, and in general in the maintenance of close relations between the academic side of the Institution and the practical world which we aim to serve.

## TRANSATLANTIC

(Continued from page 255)

In Leipzig my cousin, Professor Lichtenstein, took care of me, and I had a large audience (for a mathematical lecture) at my lecture. Debye was away at the moment, and so was Heisenberg, but I met Hund, Van der Waerden, and Koebe, as well as our own Dr. Kirkwood of the Physical Chemistry Department.

In Berlin they much regretted losing Eberhard Hopf to our Mathematics Department. My talk was followed by one by Professor Schouten of Delft, who was in town to negotiate a partial fusion of the *Revue Sémiotique* and the *Jahrbuch über die Fortschritte der Mathematik*. Schouten spoke on the new Einstein-Mayer work, which is in essence the same geometry (Concluded on page 268)



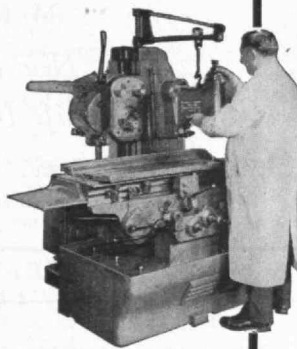
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## TRANSATLANTIC

(Concluded from page 267)

as that recently discussed by Veblen and Whitehead, whose work is in turn an amplification of a paper by Dr. Struik and myself in the *M. I. T. Journal of Mathematics and Physics*.

I met Rüdénberg, who wished to be remembered to his friends at M. I. T., and is much depressed over the general economic situation, and obtained through him an introduction at Siemens and Halske. The plant of this company at Siemenestadt in the suburbs of Berlin is marvelous. The staff impressed me as very much like the group of young engineers and technicians one meets at the Bell Telephone Laboratories.

I gave the introductory paper at a meeting of the London Mathematical Society on Generalizations of the Fourier Integral. Watson, Titchmarsh, and others also spoke, and Hardy gave the closing address. There is much activity in that field at present.

My course on Fourier Integrals at Cambridge is being given twice a week at Trinity. With Hardy's course on Fourier series and Besicovitch's course on Almost Periodic Functions, that region of analysis is better represented this term than, I am told, is usual.

I had a talk with Professor G. I. Taylor yesterday on his plans for the study of turbulence in wind tunnels by the cooling of minute red-hot platinum wires. This is a beautiful chance for the use of methods of generalized harmonic analysis in a very practical problem. We could join forces with him effectively, with our splendid laboratory facilities. Otherwise the term is too young for me to have got much into the swing of new work.

NORBERT WIENER

## INSTITUTE GAZETTE

(Continued from page 260)

to meet with alumni groups in Philadelphia, Wilmington, Baltimore, Washington, Harrisburg, and Pittsburgh. In April Dr. Tryon goes to Cincinnati, and this spring, Dr. Rowe, will be *en tour* with stands at Atlanta, Birmingham, New Orleans, and way stations.

### The 156th Council Meeting

RECENT Council meetings have been devoted almost entirely to Alumni and Institute affairs. The last one, however, which met on January 25, stored away its intramural problems and sat itself down to be informed on the business depression by two members of the Institute's Department of Economics. What Professors Davis R. Dewey and Ralph E. Freeman had to say has already been published in part in the pages of *The Review*. Dr. Dewey presented a beautifully lucid address on "Forces and Phases of the Present Economic Situation," while Dr. Freeman spoke on "The International Financial Dilemma." These two addresses precipitated a discussion of some duration, the participants including Dr. (Concluded on page 270)

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## INSTITUTE GAZETTE

*(Concluded from page 268)*

Compton, Giles Taintor, '87, Hollis Godfrey, '98, Paul D. Sheeline, '19, Percy R. Ziegler, '00, Cleon R. Johnson, '11, and others.

The Council did not give itself entirely over to instruction, but performed the usual amenities and heard the customary reports that invariably go with Council meetings. Vice-President Donald G. Robbins, '07, as presiding officer, called upon Charles E. Smith, '00, Vice-President of the New Haven Railroad, and new representative of the New Haven Club, to rise and be introduced to those present. Colonel Samuel C. Vestal, who was unfortunately absent on the occasion of the Alumni Guest Night in October, was present at this meeting and he was also asked to rise and be presented as the new Professor of Military Science and Tactics in charge of the Department. The Secretary presented the report of the Nominating Committee and gave a detailed account of recent visits to Alumni Clubs by Institute professors and officials.

## INDUSTRIAL EQUILIBRIUM

*(Concluded from page 247)*

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# M. I. T. NEWS BULLETIN

PREPARED BY JOHN J. ROWLANDS, DIRECTOR, INSTITUTE NEWS SERVICE

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## *Submarine Detection*

Scientific devices for locating sunken vessels and for submarine communication were described by President Karl T. Compton in an interview with the Associated Press on January 29, in connection with the sinking of the British submarine M-2.

Dr. Compton was a member of the United States Army Signal Corps during the World War, and was engaged in the development of submarine detection devices. Later he was associate scientific attaché of the United States embassy in Paris.

The first of these devices to be developed, and the simplest, Dr. Compton said, were those which depend upon the transmission of sound waves through water. Such sounds may originate in the screw or machinery of the ship, or by tapping against the hull in emergencies. Sound travels through water at the rate of slightly less than one mile a second.

One form of listening device is a large "sound lens" built into the side of a vessel. This lens consists of a curved metal surface pierced with a large number of holes, across which sheet rubber is stretched. Sound vibrations in the water are transmitted through these rubber diaphragms and are brought to a focus within the ship at the opening of a small horn from which a rubber tube carries the sound to the listener in the manner of a stethoscope earpiece.

Another device which permits accurate location of the direction from which a sound comes consists in lowering into the sea two rubber bulbs at the end of a long shaft. These rubber bulbs are connected to stethoscope earpieces on the surface. Sound vibrations in the water set up similar vibrations in the air within the bulbs and the sound is quickly transmitted to the listener.

Still another listening instrument is simply an ordinary telephone microphone which is lowered into the water to detect sound waves, which are transferred into electrical waves, and these, in turn, are reconverted into sound waves in the receiving apparatus. Under conditions which make it impossible for a sunken vessel to send out signals, there are still other instruments which produce a sound on the searching vessel and register the echoes of that sound. The most interesting form of this device is one which sends out sound of such high frequency as to be inaudible.

Sound in this form can be directed as a beam in much the same manner as a searchlight, and when the echo of this inaudible beam of sound comes back, it is translated into audible sound by a heterodyne method similar to that used in

radio. This device makes it possible to determine the distance of objects under the water and the relative speed of approach.

The "clucking" device mentioned in recent dispatches may refer either to a system of sound signalling between submarines or to this latter-described method of locating by means of echoes. The "cluck" is somewhat like the short toot of an automobile horn under water.

A method which was used very successfully in locating vessels during the war consists in trailing three long, bare wire cables in the sea behind the searching vessel and in passing electric currents from one cable to another through the sea water. In this way the current between the first and second cable may be made to balance that between the second and third cable. Whenever this apparatus passes near an obstruction under water the paths of flow of electric current through the sea water are distorted and this balance is thrown out of adjustment.

Another type of apparatus depends upon the magnetic effect of the iron in the sunken vessel. In this case again, recourse is made to the balancing of one magnetic phenomenon against another which will be upset by the proximity of an iron object. This method is the least suitable of those mentioned for detecting sunken vessels at a considerable distance.

The ranges of these methods are roughly as follows: Sound through water may be heard up to a distance of several miles, particularly if the sound is intense. The method of sound echoes has a shorter range, but is applicable at distances of about a mile. The electric current method is suitable for distances of one to two thousand feet.

All navies at the present time have vessels equipped with submarine signalling and echo devices. It is evident that most of these devices would be difficult to use successfully in a region where the ocean bottom is very irregular.

## *Airship Development*

Airships of the future will be two or three times as large as the great dirigible *Akron*, will use helium gas exclusively, and will make regular two-day trips across the Atlantic. Dr. Richard H. Smith '18, Professor of Aeronautical Engineering, predicted in the second Society of Arts Popular Science lecture on January 17. The subject of his address was "Airships—America Steps Ahead with the *Akron*."

Professor Smith first discussed the history of airship development, contrasted it with the airplane, and reviewed its achievements in transportation. He described the construction of the *Akron*,

the world's largest airship, illustrating his remarks with striking slides and motion pictures. The lecture concluded with a discussion of the future of airships, proposed transoceanic lines, and their possibilities for commercial success.

## *Maine Alumni Hear Dr. Compton*

President Karl T. Compton, in an address before the Technology Club of Western Maine at Portland on January 15, asserted that the labor-saving contributions to industry of scientists and engineers were not responsible for the current business depression.

Dr. Compton declared that additional millions would now be unemployed if it were not for the inventions of engineers. He maintained that the present offers tremendous opportunities to engineers, because "in times of depression there is a general tendency for increased efficiency everywhere."

## *Dr. Tryon's Western Tour*

Upon his return from a recent tour of western states which took him to the Pacific Coast, Dr. James L. Tryon, the Institute's Director of Admissions, had many pleasant things to say about the fine coöperation of the alumni wherever he went.

Dr. Tryon visited 38 colleges and universities and 25 high schools and private schools. He delivered 41 addresses before students and faculty groups in the colleges and universities and gave 23 talks in schools. His journey took him to Montana, Washington, Idaho, Oregon, California, Arizona, Texas, and New Mexico, and was the longest that he had made in his many trips away from the Institute.

The subject of Dr. Tryon's various addresses concerned engineering education and recent tendencies in university education. He also gave a number of talks on international relations, on which he is considered to be an authority. The interest in his addresses was indicated by a large number of inquiries from students and faculty groups wherever he appeared. Many of these questions concerned undergraduate and graduate work at Technology.

Dr. Tryon was particularly appreciative of the hospitality of various groups of alumni, and for the help of many individuals who arranged for special addresses and entertained him in their homes. He was most cordially received and assisted by many parents of undergraduate and graduate students now at the Institute.

"The story of what these various friends, alumni, instructors, and students did for me in the name of Technology



would make a long report," said Dr. Tryon in summing up the story of his trip. "My experiences in the different institutions, the speaking conditions, press interviews, inspections, and exchange of ideas on educational policies and methods would make still another story. And memories of comradeship are interwoven with the incidents and the adventures of the journey. They are inseparable human elements."

### *At the Faculty Club.*

Impressions of Japan received during a lecture trip through that country were described by Dr. A. E. Kennelly, Professor Emeritus of Electrical Engineering, at a luncheon meeting of the Faculty Club on January 19.

Dr. Kennelly was the initial holder of the lectureship recently established by the Iwedere Foundation in Japan, which provides for a series of lectures to be given during one month of each year by prominent professors from American engineering colleges.

### *Honor to Honor Added*

The first award of the Richards gold medal for conspicuous achievement in chemistry has been made by the Northeastern Section of the American Chemical Society to Professor Arthur A. Noyes '86, former Professor and Acting-President of Technology. Dr. Noyes at present is Director of the Gates Chemical Laboratory of the California Institute of Technology. Formal presentation of the medal will be made at the annual meeting of the society next May.

Professor Noyes was born in Newburyport, Mass., in 1866. Following his graduation from the Institute he studied at Leipzig, Germany. He taught at M. I. T. from 1890 to 1920, and served as Acting President for two years following the resignation of Dr. Henry S. Pritchett in 1907. He assisted in the organization of the California Institute of Technology, and has been Professor of Chemistry there since 1920.

Dr. Noyes is internationally known as an authority in the fields of qualitative analysis and physical chemistry. He is a member of numerous scientific societies, and has received many honorary degrees and awards, among them the Davy Medal of the Royal Society of London.

The Richards medal was established by the Northeastern Section of the American Chemical Society in 1929, in commemoration of the contributions to chemistry made by Theodore William Richards, for 25 years Professor at Harvard University. He is the author of several books and articles on chemistry.

### *From West to East*

Professor R. B. Brode, a member of the staff of the Department of Physics at the University of California, has joined the staff of Technology as Associate Professor of Physics for the period of the second term.

### *Technology Women*

The annual meeting of the Technology Women's Association took place on January 16 in the Emma Rogers Room of the Institute. Following the meeting a luncheon was held in Walker Memorial, at which President Compton and Professor Frederick K. Morris of the Department of Geology were the chief speakers.

### *A Survey of Health Education*

The first comprehensive survey of health education activities in the City of Boston is being undertaken by Miss Ruth I. Parsons, research assistant in the Department of Biology and Public Health at Technology, under the auspices of the Boston Health League.

This study, believed the first of its kind ever attempted in a large city, includes the activities of the Boston Health Department; public, private, and parochial schools; medical institutions of the city; private agencies, and commercial groups.

The survey aims to determine what groups are carrying on work in health education in Boston, and the quantity, quality, and adequacy of that work. On the basis of these facts, it is believed, constructive suggestions may be made for strengthening the city's present health education program.

This work is being carried on under the supervision of the Health Education Committee of the Boston Health League, of which Dr. Clair E. Turner '17, Professor of Biology and Public Health at Technology, is Chairman.

### *Lectures on Architecture*

Charles H. Lench, the well-known New York architect, is giving a series of weekly lectures on the practical and business aspects of architecture in the Department of Architecture at the Institute. These lectures will be given every Monday during the second term.

Mr. Lench treats the practical and business side of architecture as related to real estate and financing, and his lectures provide a natural development of earlier courses in office practice and professional relations.

The lectures are open to students of the Boston Architectural Club and to members of the Boston Society of Architects. While not a required part of the Department of Architecture's curriculum, the lectures offer advanced students a valuable opportunity to become acquainted with some of the facts in an architect's professional life that are not made apparent in courses on theory or composition.

Mr. Lench is a graduate of the University of Michigan and of the Harvard School of Architecture. He is well known as a lecturer at Columbia University, and has made valuable contributions to the literature of architecture.

The series of lectures was made possible by the cooperation of Dean Edgell of the Harvard Department of Architecture.

### *Bon Voyage to Dr. Woolley*

President Karl T. Compton was one of several prominent college executives who addressed a recent luncheon meeting of the Boston City Club, held in honor of Dr. Mary E. Woolley, President of Mount Holyoke College, shortly before her departure as a representative of the United States to the Disarmament Conference at Geneva. Dr. Compton, in a brief speech, assured Dr. Woolley of the hearty support of her fellow college presidents.

### *The Second Aldred Lecture*

Lucius S. Storrs, President of the United Railways and Electric Company of Baltimore, delivered the second Aldred Lecture at the Institute on January 8, when he spoke on "Engineering Experiences."

Mr. Storrs, who has long been prominent in railroad and business circles, described his emergence from mining geologist to traction president. He graduated from the University of Nebraska in 1890 as a mining geologist, and practiced that profession for several years before entering upon his railroad career.

Mr. Storrs was formerly Vice-President of the New York, New Haven and Hartford Railroad and President of the New England Investment and Security Company. From 1914 to 1925 he served as President of the Connecticut Company in New Haven, following which he was Managing Director of the American Electric Railway Association for four years. Since 1929 he has occupied his present position as Chairman and President of the United Railways and Electric Company of Baltimore.

### *A Memorial*

A memorial to the late Frederick P. Fish, who was a member of the Corporation of the Institute and a distinguished leader in the world of law and business, was presented recently at a special session of the United States District Court in Boston. Judge James M. Morton, who presided, accepted the memorial as "part of the records of this United States District Court."

With Judge Morton on the bench were Judges James A. Lowell and Elisha H. Brewster. This tribute to Mr. Fish was attended by many of his friends.

### *New Régime for The Tech*

Elections to the Managing Board of *The Tech*, Volume LII, were announced at the annual banquet held at the Hotel Somerset on January 15. John G. Hayes '33, Marietta, Ohio, was chosen General Manager; Beaumert H. Whitton '33, Charlotte, N. C., Editor; Dayton H. Clewell '33, Berwick, Pa., Managing Editor; and David B. Smith '33, Mercersburg, Pa., Business Manager.

### *Summers Keeps Pro Squash Title*

Coach Jack Summers of the Institute's squash teams kept his title of

national professional squash racquets champion in recent match play in New York.

Since Summers joined the Institute staff, squash has become increasingly popular among students and members of the faculty, and the excellent courts constructed a few years ago are kept in constant use.

### *Tech Engineering News Elections*

Wilber B. Huston '33, Seattle, Wash., holder of the first Edison scholarship, was recently elected General Manager of the *Tech Engineering News* for the coming year. Donald G. Fink '33, Englewood, N. J., was chosen Editor-in-Chief, and Charles E. Buchanan '33, Arlington, Mass., became Business Manager of the publication.

### *Scholarship in Building Construction*

A scholarship of \$500 providing first-year tuition in the Course in Building Construction at Technology has been established by the New England branch of the Associated General Contractors of America. This scholarship also guarantees the student a position for three years after successful completion of his studies with the degree of bachelor of science in building construction.

Establishment of the scholarship, which will be awarded annually for five years beginning next fall, was made in the belief that specially trained engineers of exceptional ability will have a marked effect upon the future of the building industry by improving methods and reducing waste. The details of the scholarship were planned by the educational committee of the New England branch of the Associated General Contractors, of which Leonard C. Wason '90, President of the Aberthaw Company of Boston, is Chairman.

Applications for the new scholarship must be made to the Department of Building Construction at Technology before May 2. Students will be supplied with a special questionnaire covering character, education, and personal background. Applicants will be required to pass the college entrance board examinations, and the 25 with the highest standing will then be notified to present themselves at Technology for a special examination, in which the winner of the scholarship will be chosen.

The course is headed by Professor Ross F. Tucker '92.

### *Basketball Victories*

Technology's varsity basketball team has been making sports history at the Institute. The team this year has already rolled up a total score of 232 to a combined opponents' score of 149 points, and has won five out of the six games it has played up to the first of February.

The outstanding victory, so far as Technology men were concerned, was the game in which the Institute team defeated Harvard by the low score of 14-12. In this encounter, characterized by brilliant defensive play throughout, Technology came from behind in the last few minutes of play to gather in the spoils of victory.

The results of the individual games up to the first of February follow: Technology, 57, Newport Naval Training School, 14; Technology, 33, Crimson Independents, 26; Technology, 26, Rhode Island State College, 41; Technology, 60, Clark University, 30; Technology, 14, Harvard University, 12; Technology, 42, Brown University, 26. Several more games are to be played.

### *Courses for Unemployed Engineers and Architects*

Engineers and architects who are now unemployed are offered free courses in engineering subjects at Technology, according to a plan announced by President Karl T. Compton on February 1.

Twelve courses were planned to start on February 9, and will continue until May 25. Others will be added if sufficient applications are received.

All courses are given by members of the Faculty of Technology, and are offered with the hope that they will be helpful professionally to those engineers and architects who wish to broaden their knowledge in anticipation of future opportunities in their field.

The committee appointed by President Compton to administer these courses consists of Professor Charles F. Park '92, Chairman, Professor Carroll W. Doten, and Registrar Joseph C. MacKinnon.

Following are the courses: *Accounting*, Professor Wyman P. Fiske, Tuesdays, 3-4 p.m., Burroughs Building, 10 Somerset Street, Boston.

*Distribution of Electricity for Light and Power*, Professor Jayson C. Balsbaugh, Mondays, Wednesdays, and Fridays, 2-3 p.m., Room 2-235.

*Electrical Equipment of Buildings*, Professor Ralph G. Hudson, Tuesdays, 10-11 a.m., Room 10-275.

*European Civilization and Art*, Professor John O. Sumner, (Greek) Tuesdays and Wednesdays, 11-12 a.m.; Fridays, 10-11 a.m. (Renaissance) Wednesdays and Fridays, 9-10 a.m., Rogers Building, 491 Boylston Street, Boston.

*Foundations and Soil Mechanics*, Professor Glennon Gilboy, Tuesdays, Wednesdays, and Thursdays, 1-2 p.m., Room 1-275.

*Highway Engineering*, Professor Charles B. Breed, hours to be selected.

*Marketing*, Professor Robert F. Elder, Wednesdays, 3-4 p.m., Burroughs Building, 10 Somerset Street, Boston.

*Materials*, Professor Harrison W. Hayward in charge, Tuesdays, 2 p.m., Thursdays, 3 p.m., Room 1-132.

*Mechanical Equipment of Buildings*, Professor James Holt, Mondays, Tuesdays, Wednesdays, and Fridays, 9-10 a.m., Room 5-129.

*Production Methods*, Professor Robert H. Smith, Fridays, 12-1 p.m., Room 3-370.

*Reinforced Concrete Design*, Professor Dean Peabody, Jr., Mondays, 2-4 p.m.; Thursdays, 2-3 p.m., Room 1-150.

*Theory of Structures*, Professor Eugene Mirabelli, Mondays and Fridays, 1-2 p.m., Room 1-132.

### *Departmental Lectures and Colloquia*

#### PHYSICS AND PHYSICAL CHEMISTRY

*Physical Colloquia*. — "Properties of Photographic Emulsions in Near Ultraviolet," Mr. W. M. Cady; "Grating Installations in New Physics Research Laboratory," Professor F. H. Crawford; January 4, Harvard University.

"Some High Frequency Sound Experiments," Professor G. W. Pierce; "Predissociation in the CaH Band Spectrum," Professor E. C. Kemble; January 11, Harvard University.

*Physics Colloquia*. — "The New Orleans Meeting of the American Physical Society," Dr. Karl T. Compton; January 7.

"Akulov's Theory of Ferromagnetism," Mr. D. G. C. Luck '27; January 14, Technology.

*Theoretical Seminars*. — "Atomic Wave Functions," Professor P. M. Morse; January 6, Technology.

"Atomic Wave Functions," Mr. J. P. Vinti '27; January 13.

*Harvard-Technology Seminar*. — "Statistical Mechanics and the Vapor Pressure Constants of Gases, III," Dr. T. E. Sterne; January 12, Technology.

*Chemistry Conference*. — "The Fluorides of Silicon," Mr. E. L. Gamble; January 7, Technology.

# ADVERSARIA

## Nominated

¶ HARRY P. CHARLESWORTH '05, for the Presidency of the American Institute of Electrical Engineers. He became a member of this society in 1922 and a fellow in 1928. Mr. Charlesworth, Vice-President of the Bell Telephone Laboratories, is an expert in the telephone branch of the electrical industry. He has spent his entire career in the development of telephonic operating methods and general related engineering problems.

During the war Mr. Charlesworth was specially assigned to handle problems wherein the Bell System could be of assistance to the government. In this capacity he was active on communication facilities, for army camps, naval bases, supply depots, and particularly for the government departments at Washington, where he also assisted the telephone company on general equipment and traffic engineering matters.

Mr. Charlesworth's important position now as Vice-President of the Bell Telephone Laboratories, comprises the direction of operations involving more than 5,000 people engaged in development, research, and related activities pertaining to the communication art.

## Promoted

¶ ALBERT F. HEGENBERGER '17, to the rank of captain. Lt. Hegenberger, who won world-wide recognition for his transpacific flight from Oakland, Calif., to Hawaii with Lt. Lester J. Maitland, is stationed at Wright Field, Dayton, Ohio. Review readers will recall his article "Westward Ho!" printed in the November, 1927, issue, which tells of this flight.

## Elected

¶ FREDERIC E. EVERETT '00, to the Presidency of the American Association of State Highways.

¶ ALLEN B. MCDANIEL '01, to the Presidency of the Washington Society of Engineers for the coming year. The following Alumni have officiated in the Society as President: Starr Truscott '07, 1929; Frederick A. Hunnewell '97, 1930; and Captain William E. Parker '99, 1931.

Thus for four successive years Technology men have held the Presidency!

Mr. McDaniel is the author of the article on the Baha'i Temple in the October, 1930, issue of *The Review*.

## Written

¶ By MARION TALBOT '88, an article entitled "Changing Education in a Changing World," which appeared in the *Journal* of the American Association of University Women.

¶ By GEORGE E. HALE '90, a book, "Signals from the Stars," published by Charles Scribner's Sons.

¶ By ROBERT G. HALL '97, an article entitled "The Embryo Mining Engineer and Industrial Depressions, Past and Present," which appeared in the December, 1931, issue of *Mining and Metallurgy*.

¶ By CARL J. TRAUERMAN '07, an article entitled "A Depression-Proof Industry," which was published in the December 30th issue of the *Mining Journal*.

¶ By TENNEY L. DAVIS '13, Contributing Editor of *The Review*, an article, "School — Go Slow," appearing in the December, 1931, issue of the *Wiley Bulletin*.

¶ By JAMES A. TOBEY '15, a book "Cancer: What Everyone Should Know About It," published by Alfred A. Knopf. In this book Dr. Tobey explains the nature of cancer and what cancer is not, relates its history, and discusses the various types and locations of cancer and its danger signals. He also deals with the developments, heredity, and contagion of the disease; its causes and treatment; its prevention and control; and the most recent cancer cures and false cures. There is also a chapter on the anti-cancer movement and one on famous persons who have had cancer.

On a cover of a recent issue of the *Scientific American* Dr. Tobey's name was spelled *Tobe*!

¶ By HAROLD F. DODGE '16, an article, "Squares and Rectangles," appearing in the November, 1931, issue of *Bell Laboratories Record*.

¶ By FREDERICK H. NORTON '18, a book "The Creep of Steel at High Temperatures," published by McGraw-Hill Book Company.

¶ By ANTHONY ANABLE '20, an article, "The Future of the World's Gold — A Forecast," published in a recent issue of *Review of Reviews*.

## Honored

¶ JOSEPH E. NUTE '85, by being the recipient of the first Silver Beaver Award ever authorized by National Headquarters of the Boy Scouts of America. The certificate which credits Mr. Nute with "Distinguished Service to Boyhood," bears the signatures of Herbert Hoover, honorary President of the Boy Scouts; Dan Beard, National Scout Commissioner; Walter W. Head, President; John H. Finley, Chairman of the Committee on Awards; and James E. West, National Chief Scout Executive. Mr. Nute has long been interested in Boy Scouts.

## Spoke

¶ KARL T. COMPTON, President of the Institute, at the Western Maine Alumni Association dinner meeting, recently.

Dr. Compton challenged the members to "evolve through the present industrial crisis new forces which may successfully combat exigencies that might some day reappear." He pointed out that the present economic "unrest and distress" would have claimed many more millions for the lengthy and unemployed lines had not the invention of the automobile, radio, and moving and sound pictures been given to the world by its engineers.

"Engineers are facing a tremendous opportunity," Dr. Compton said, "because in times of depression there is a general tendency for increased efficiency everywhere. Perhaps this depression may really be a blessing in disguise. The world cannot possibly conceive the contemplated projects of engineers."

¶ WILLIS R. WHITNEY '90, recently, over the radio, his subject being popular science.

¶ ALFRED P. SLOAN, JR. '95, at the Boston Chamber of Commerce luncheon on January 7.

¶ RAYMOND M. HOOD '03, on January 9, before the Business Men's Association. Mr. Hood, who is the architect of Rockefeller's "Radio City," gave a detailed description of this project now under construction.

¶ ARTHUR E. KENNELLY, Professor of Electrical Engineering here at the Institute 1914-1925, on December 18, before the Engineering Association of Hawaii. Dr. Kennelly, one of the nation's foremost engineers, praised the radio phones which connect Hawaii to the mainland, thus eliminating the former isolation of Hawaii. Dr. Kennelly, now back in Cambridge, on January 19 addressed the Faculty Club here at M. I. T. on "Impressions of Japan."

## In the News

¶ LOUIS S. CATES '02, by being characterized in the *New York Journal* of December 19, 1931, as the man of the week in finance. Surrounding his picture are a series of cartoons showing the different important steps he has taken which mark his most interesting career. His latest achievement is paving the way for world curtailment of copper production.

¶ DENTON MASSEY '24, by being the founder of the York Bible Class of Toronto, which now has an enrollment of 2,400, and which has outgrown four meeting places. This class is broadcast every Sunday, is undenominational, and open to all men. Mr. Massey is also an official in the Toronto factory of Massey-Harris Company, Ltd., largest manufacturers of farm implements in the British Empire.

¶ FREDERICK K. MORRIS, Professor of Geology here at the Institute, by having an account of his Gobi expeditions in



Central Asia with Dr. Roy C. Andrews written in the *Christian Science Monitor* of January 15. The article is illustrated by Professor Morris, who is an artist as well as a geologist.

### Retired

¶ WALTER HUMPHREYS '97, as President of the University Club of Boston. An interesting article about Mr. Humphreys appeared in a recent copy of the *University Club News*.

### From Turkey

¶ Readers are referred to the 1877 notes for the autobiographical letter presented therein from Francis H. Bacon, architect, artist (marvelous pen and ink sketches he has made!), and classicist.

### Scientific Progress in 1931

¶ In the 1931 *World Almanac* are listed men and organizations which have made notable advances in scientific discoveries during the past year. Among those related to the Institute are:

GEORGE E. HALE '90, of Mount Wilson Observatory, "has undertaken the organization of a world-wide scientific agency for the gathering of facts concerning the activities of the solar atmosphere. Stations are to be located at Cambridge, England; Zurich, Switzerland; Florence, Italy; Beirut, Syria; Kodaikanal, South India; Watherhoo and Canberra, Australia; Nanking, China; Wellington, New Zealand; Apia, Samoa; Mount Wilson, Calif.; Vermilion, S. D.; Williams Bay, Wis.; Chicago; Columbus, Ohio; Poughkeepsie, N. Y.; New York City; Cambridge, Mass.; and Philadelphia."

CHARLES G. ABBOT '94, Secretary of the Smithsonian Institution, "announced success in forecasting solar radiation variations and weather changes."

ARTHUR I. KENDALL '00, Professor of Research Bacteriology in the Northwestern University School of Medicine, "discovered that feeding human proteins to germs succeeded in making invisible germs visible, and in causing visible ones to vanish into filterable viruses. These germs included those of infantile paralysis, streptococcus, scarlet fever streptococcus, one form of paratyphoid bacillus, typhoid bacillus, the staphylococcus, the crooked germ found in yellow fever patients, and the round one found in influenza cultures. Bacteriologists regard this as the greatest discovery in their field since the work of Pasteur." (See *Adversaria*, October, 1931, page I.)

ELIHU THOMSON, Life Member of the Corporation, "predicted at the Faraday Centennial that television ultimately will make it possible for the whole world to view a total solar eclipse."

ROBERT J. VAN DE GRAAFF, Research Assistant in Physics here at the Institute, "perfected a simple and inexpensive method of building electrical generators capable of developing 15,000,000 to 20,000,000 volts." (See December, 1931, Review, page 123.)

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, "announced development of apparatus that permits photographing a whirling motor as though it were still." (See March, 1931, Review, page 290.)

### Presented

¶ By THOMAS K. SHERWOOD '24, Assistant Professor in Chemical Engineering, two papers before the Annual Meeting of the American Institute of Chemical Engineers.

¶ NORBERT WIENER, Professor of Mathematics at the Institute and Contributing Editor to *The Review*, now on his sabbatical year, a series of lectures on "The Fourier Integral and its Application," at Trinity College, Cambridge, during the Lent Term.

### Opinion

¶ ELIHU THOMSON, Life Member of the Corporation and dean of American electrical engineers, has proposed a plan by which it may be possible to exterminate the mosquito. The idea was suggested to him by the following experience.

Last year a huge, electric furnace was operated along the swampy, mosquito-infested Saugus River at Lynn, Mass., by the General Electric Company. Despite the thousands of mosquitoes, none of the workers were bitten. It was discovered that many dead mosquitoes were on the furnace top and in its crevices. When Dr. Thomson investigated the matter, he found that all the corpses were males. This gave Dr. Thomson an idea. The three-phase 60-cycle hum of the heaters in the furnace was to his ear "an exact representation of the noise one hears as a female mosquito visits one in the night, and one endeavors to crush the annoying creature by a slap of the hand on the side of the face where the pest appears to be ready to draw blood from the victim of its attention."

Dr. Thomson reasoned that if the males were attracted by a hum, they could be drawn to such a spot and "cooked," thus curtailing the egg-laying power of the female and gradually exterminating the mosquitoes. He decided to consult with Professor George Howard Parker, Harvard zoologist, specialist on the anatomy and physiology of sense organs and animal reactions. Professor Parker asserted Dr. Thomson's assumptions in regard to the following: only the female mosquitoes hum; the males are provided with antennae which project from the head and enable them to recognize the presence of the female; the males do not bite, but the females do, thus obtaining nutrition for the eggs which lie in stagnant bodies of water.

With this knowledge in mind, Dr. Thomson proposes: "To organize an electro-magnetic 'hummer' which, at small expense of energy, can spread over a large space the peculiar hum, and attract the males; perhaps also repelling the females. Various ways of trapping the males may be suggested, as they need not be desiccated or cooked to get rid of them."

### Walter S. Moody '87 on Engineering Education

¶ Mr. Moody, Professor of Physics at the Institute, 1887-1888 and 1895-1897, tells of an education obtained from the teaching of Fundamentals, without their specific application to engineering practice, as viewed by his personal experience.

"Having devoted all my professional life to alternating current apparatus and especially to transformers, it is interesting and perhaps instructive also to look back 40 odd years and recall how little specific training I received for this work from textbooks, lectures, or laboratory work, and yet how the very thorough fundamental training we received answered all future requirements.

"By referring to page II in the Supplement of the October issue of *The Review*, the reader will see that the writer graduated in Technology's first class of electrical engineers and will find a brief statement of his activities.

"What did one find in textbooks, lectures, and laboratories at that time on alternating currents to prepare one specifically for such life work? Practically nothing: just a few words about Jablicoff Candles that operated on alternating currents in France and magnetos that were used to ring telephone call bells. Technology's electrical laboratories contained two or three Siemens dynamometers that would measure alternating currents with accuracy and a Cardew hot-wire voltmeter that would measure alternating voltage but without much accuracy; nothing more. The alternating wattmeter (the all-essential to any real knowledge of the performance of alternating current apparatus) did not arrive until several years later.

"The laboratories contain neither an alternating current generator or a transformer, because neither existed outside a few small models in the laboratories of a few private inventors. Many of those best informed, including our own beloved Professor Cross, predicted, at that time, that alternating current apparatus could never be efficient enough to be commercially practical.

"In 1888, William Stanley, who was one of those far-sighted enough to believe in the future of alternating current, delivered a lecture before the Massachusetts Society of Arts, explaining and demonstrating an alternating current generator, feeding power to transformers connected in multiple with it, that he was developing for Mr. George Westinghouse. As an instructor at Technology, I helped him prepare the apparatus used in the demonstration and after the lecture was over, was invited by Mr. Stanley to have a midnight supper with him at Youngs Hotel. I have never been able to decide whether the wonderful possibilities of alternating current, as presented by Stanley, or his charming personality had most to do with my decision, made then and there, that alternating apparatus must be my life work. It may seem strange to those of us who knew Professor Cross

and his fine judgment, that in 1888 he saw no commercial future for the distribution of power by alternating current, but after all, his opinion would probably have been justified if there had not been wonderful advances in the quality of magnetic steel which resulted in the losses being now scarcely 25% of what they were when his prediction was made.

"But what I desire to emphasize is that although several others and the writer entered this field from Technology without ever seeing such apparatus as we were to produce. Yet so good was the training we had received in the Fundamentals of Engineering that I (and I believe my classmates also) never felt handicapped because we had had so little opportunity for studying the application of these fundamentals, or in the so-called practical training that many responsible for technical training consider so essential to success.

"True, we did not have for some years competition from others who had had any practical training for their specialty in their college work. We, ourselves, were largely creating our own Art, and this is the answer that those who believe in practical training along with the technical will probably give to explain our success. However, my strong conviction, based on 45 years observation and experience, is that we Alternating Current Pioneers lost very little, if anything, by having been trained only in theory and fundamentals of our chosen Art."

## Deaths

Reports have come to The Review since the last issue of the decease of the following:

HENRY L. J. WARREN '75, suddenly, February 10, in Brookline.

EDWARD G. COWDERY '77, on January 13.

DAVID RICE '86, January 18, in Boston.

JAMES W. CARTWRIGHT '89, on September 29, at his home in Hampton, Conn.

CHARLES B. BEASOM '90, on December 8, at Nashua, N. H.

ROBERT T. WALKER '90, on December 24. Mr. Walker was an architect specializing in ecclesiastical art and architecture. He was the founder of the National Guild of St. Vincent for Acolytes and was Secretary General of the order.

FREDERICK W. BAKER '93, on January 3, at his home in Claymont, Del. Mr. Baker was a retired naval architect. During the Spanish-American War he served in the navy as lieutenant.

HOWARD R. SARGENT '93, on December 8, at Bridgeport, Conn. (See '93 class notes in the February issue of The Review for detailed account of his life.)

LOUIS B. VINING '93, on January 31, at his home in Newtonville. For many years Mr. Vining was associated with the firm of Charles T. Main, Inc.

WALTER O. SCOTT '94, on December 23, in Providence, R. I. (See '94 class notes in this issue for further details.)

REBECCA KITE '96, June 9, 1931. (See '96 class notes in the February issue.)

NORMAN F. RUTHERFORD '96, in October, 1931, in Dover, N. J.

RALPH S. VINAL '97, on January 9, at his home in Winchester. Mr. Vinal combined domestic architecture with landscape gardening, and had built many fine homes around Boston. At the time of his death, he was still in charge of the landscape work in the public parks of Pittsburgh, having held this position for 20 years.

OUTERBRIDGE HORSEY '98, on October 26, 1931, in New York City.

PERCIVAL H. LOMBARD '98, on January 22, at his home in Brookline. (See '98 class notes in this issue for further details.)

LEWIS S. STRENG '98, on December 24. Mr. Strenge was Vice-President in charge of operation of the Louisville Gas and Electric Company, Louisville, Ky.

STUART W. BENSON '05, on December 23, at Pittsburgh, Pa. (See '05 class notes in this issue for further details.)

FRANKLIN RIPLEY '07, on January 14, in Troy, N. H.

WINTHROP D. FORD '08, on January 28, at the U. S. Veterans Hospital, Fort Lyon, Colo. During the World War he served in the Navy, rising to the rank of lieutenant.

FRED S. DODSON '12, on October 31, 1931. Mr. Dodson was a special agent of the State Mutual Life Assurance Company.

DONALD E. LOVELL '23, late last summer, at Mount Macgregor, N. Y., after a long illness.

ALEXANDER HENDERSON '25, on October 10, 1931, at Passaic, N. J. Mr. Henderson was President of Henderson and Company, makers of electrical appliances.

OSCAR W. ERICKSON '26, on November 5, 1931, as a result of an accident on the U. S. S. *Saratoga*. Mr. Erickson was a lieutenant-commander in the Navy.

RICHARD W. HOLMES '28, on January 13. At the time of his death, Mr. Holmes was enrolled at the Coast Artillery School at Fort Monroe, Va.

WEBSTER L. MACKUSICK '29, on September 22. Since graduation, Mr. Mackusick had been employed by the Standard Oil Company of Indiana.

## Resolutions on the Death of Howard A. Carson '69

The following resolutions were presented to the Alumni Council on November 30, 1931:

"Howard Adams Carson, who died October 26, 1931, was one of Technology's most distinguished alumni. After service in the Civil War, he entered Technology and was one of the pioneers in working his way through. He was graduated with the Class of '69 at the mature age of 26.

"Some two years after graduation, he was employed at Providence upon the water works then under construction, and was soon appointed by his chief to take charge of sewer construction. Aside from his successful general conduct of this assignment, he developed a capacity for handling difficult work and while

employing men under city payroll, he completed many jobs at a cost to the city considerably below the bids by contractors. During this time he invented a trench machine which came into large use.

"He came to Boston to take charge of the construction of the city's intercepting sewer. Later he became chief engineer of the Metropolitan Sewerage Commission, his duties covering the design and construction of a system serving 19 municipalities. The project involved the comprehensive design of the system, including pumping stations, siphons, and outfall sewers, as well as overcoming difficulties of various sorts of construction. This project, which demanded able and skillful engineering as well as originality, was carried to a successful completion under Mr. Carson.

"A little later he became chief engineer of the Transit Commission under which the Tremont Street Subway, the pioneer under street tunnel, was completed well within the estimates and with almost less than a minimum disturbance of traffic, a feat which, probably, no other engineer would have equaled. The East Boston Tunnel under the harbor was a further accomplishment.

"As a consulting engineer, perhaps his most important and interesting undertaking was as one of a commission of three which successfully solved the difficult problem of the method of construction of the railway tunnel under the Detroit River.

"Mr. Carson's distinguishing characteristic was his interest, ingenuity, and skill in methods of construction and handling, rather than the ultimate design so far as these were dissociated. As an engineer, he was rigid in the enforcement of specifications and in securing quality of work, but was respected by contractors for his fairness. He earned and held the esteem of his associates and the public by force of character rather than by mere personal popularity. He was elected President of the Boston Society of Civil Engineers and also received the marked distinction of becoming an Honorary Member of the American Society of Civil Engineers.

"He was a past President of the Alumni Association and was the first alumnus to become a member of the Corporation, having been nominated by the Alumni at the solicitation of the Corporation. He served the Institute loyally and efficiently in that capacity until, at the time of his death in his eighty-ninth year, he was the senior and oldest member of the Corporation.

"Mr. Carson was unusually devoted to his professional work and to his wife. Soon after his retirement from active work his wife died and this was a blow from which he never fully recovered. His was a distinguished career which left the world better for his achievements, though his loss leaves his many friends the poorer."

Robert H. Richards '68

Arthur D. Little '85

C. Frank Allen '72, *Chairman*



# NEWS FROM THE CLASSES AND CLUBS

1877

The only missing member of the Class has been located at Dardanelles, Turkey. It is none other than Francis H. Bacon, whose letter follows: "Your letter was forwarded to me here and I suppose this is the season of get-together for all the old classes and '77 is now down near the foot. Whoever would have thought it! I hope the good Clark is still at the head of the table and not too many vacant seats!

"You ask for news of my activities. At 75 one doesn't jump about as formerly, but perhaps I ought to explain how I happen to be living here on the Hellespont and at the risk of repeating what some of you already know, I'll start at the beginning! When I left the Institute I worked as draftsman in an architect's office, living on beans and saving every cent I could because a friend and I had a grand scheme of going to Greece and Turkey to visit all the old temples and then writing a history of Doric architecture for which I was to make the sketches. On our way to England, we found we didn't have money enough to do all we wanted if we traveled in the usual way, so we bought a small boat on the Thames that we could live on, sailed her across the channel, up the Rhine, down the Danube to the Black Sea through to Constantinople, on through the Aegean and the Greek islands to Athens, where we arrived stone broke and had to wait till a kind friend sent us money enough to get home with. (It was Professor Norton of Cambridge!)

"Among the ancient sites we visited was that of Assos in the Southern Troad where there was an early Greek temple. A few years later the American Archaeological Society decided to excavate this site and with my friend, J. T. Clarke, I spent three interesting years there, winding up by becoming engaged to a young lady in Dardanelles. After my marriage, I lived in Boston until recently when I retired from business and that's why I am living here.

"Now enough of this, let's continue. The last few years, I have been taking trips to Constantinople and Athens, where I have many friends, each only an overnight journey from here. I interest myself in the museums and in making drawings of old Greek details! Last winter I spent six weeks in Rhodes, an enchanted island where there is an interesting museum and a fine archaeological library, all in the old castle of the Knights of Jerusalem.

"But now let's jump again to the present, for I have some real news to tell you. For a wonder, the Turks have recently given a concession for the excavation of ancient Troy to Professor Semple of Cincinnati University and the expedition

will be in charge of Professor Carl Blegen, formerly of the American School at Athens, who comes early this spring with a competent staff. Professor Dörpfeld, who worked with Schliemann, is coming to collaborate, so there will be interesting doings here, as Troy is only an hour away by motor car. On account of my crippled legs, I can only sit on the side line, but you can imagine the interest I will have in all this, as I have been familiar with the site for the last 50 years. When we sailed down the Dardanelles on that famous voyage in 1879 we stopped at Troy and I met Dr. Schliemann, who was then digging there and he took me over the excavation, waving his arms and spouting Homer. He also was destroying the foundation of the fine temple of Athena built by Lysimachos in 300 B.C. and was throwing the marble blocks of the stylobate down a dump heap. When I protested, he said he only cared about prehistoric and wanted to get at the old Trojan cities underneath. Now I think this is quite enough, and a salute to you and the fellows." I envy Bacon for his opportunities.

A letter from Frank Tucker Hopkins follows: "It was a great pleasure to get your note of the 20th instant. Although, as you remarked, my interest in the M. I. T. has faded gradually to almost nothing, your letter has revived in my mind many incidents which I had almost forgotten.

"I left the class because I was dropped. President Runkle (was it not?) wrote a kindly letter to my father suggesting that I repeat the year. It discouraged me greatly, for though now I can see very easily why I did not pass, I was then too young to appreciate the reasons, and too foolish to take the year over again.

"I drifted into business, but my health not being equal to my work, I remained at home for a year or more and then fitted for college and entered Amherst in the Class of '83. Then I came to New York and studied medicine, and was subsequently interne in the Roosevelt Hospital and again in the Foundling Hospital. At the end of my hospital courses I practiced in Fishkill-on-Hudson for five years and then removed to New York where I have since lived.

"After a few years of general practice, I took up the special work of ear diseases (otology), combining with that more or less the specialty of rhinology. I became officially connected with the New York Eye and Ear Infirmary and St. Luke's Hospital in the department of otology.

"In the last two years my health has been somewhat impaired by a chronic pyonephrosis (kidney abscess) and I have given up hospital work altogether, though I still attend my office on part time, lessening my work, however, more on account of trouble with my eyes which

has resulted in blindness in one. For this reason I prefer to use the typewriter rather than the pen and for the same reason you must excuse the bad work I make of it, being inexperienced as I am.

"In connection with this biography (!) it is, I suppose, necessary to state that I am, of course, a member of the American Medical Association, the New York State Medical Society, the County Society (N. Y.), and the Academy of Medicine. Almost all New York physicians are. And also in my special line, I am a member of the American Otological Society and the New York Otological Society. I have written no books. I have published articles, some half dozen, on subjects connected with the ear.

"In 1901 I married Emily Linnard Neilson (widow of Robert H. Neilson) of Philadelphia. We have no children. By her first husband she had a daughter, Dorothy, now a widow and still living with us, as you know, at 142 East 71st Street. My office address is 121 East 60th Street, New York City.

"I remember so little of the Institute, so few of the Professors, so few of the students. I remember Jennings, a spruce, well set up young fellow, who was appointed Captain of our drill squad. I remember a man with one eye (Houghton, I think) and I then wondered how it felt to have only one eye. Now I know. I vaguely remember the student who was the youngest of the class (Phipps?) and I remember Mudge because of his name. Also the bright and clever Cushing. I think he was killed in an accident some years later. And I remember Stewart (?), a tall blond fellow with curly, very yellow hair who could wiggle his ears without moving any other muscles of his face and found it highly amusing to do so. There are others whom I vaguely remember. Yourself, I am sorry to confess, I do not remember at all, but I suppose that you also have no remembrance of me either.

"As I am now well over 74, I imagine that you must be well on to 75. It is very kind of you to take on the labors of Class Secretary and historian. Of the professors, I was going to say I remember the chemistry man, name begins with an R (Ripley, perhaps); the English professor and the drillmaster, Lieutenant Zabrisky, I think, or Zalinski — quite savage at times." — BELVIN T. WILLISTON, *Secretary*, 3 Monmouth Street, Somerville, Mass.

1886

The Northeastern Section of the American Chemical Society has awarded the Richards Gold Medal to Professor Arthur A. Noyes. The presentation of the medal is to be made at the Annual Meeting in May.



1886 Continued

The medal was established by this Section of the Society to commemorate the contributions to the science by the late Theodore William Richards, for many years professor of chemistry in Harvard University.

The Class is the poorer by the loss of another loyal member. David Rice died at the Hotel Puritan in Boston, January 18. He is survived by his widow, who was Mrs. Helen Hunt Gordon; a sister, Miss Ellen P. Rice, and a brother, Arthur W. Rice '91. — ARTHUR G. ROBBINS, *Secretary*, Room 1-270, M. I. T., Cambridge, Mass.

## 1888

The following item in regard to Sjöström appeared in a recent issue of the *Boston Herald*: "The \$2,000,000 Lawrence Dye Works and Uswoco Mills, which were sold to a group of local business men for \$32,000 to save the property from bidders who offered \$21,000 at auction for the purpose of junking them, will shortly be reopened, furnishing employment for a maximum of 2,000 workers, it was announced today. Ivar L. Sjöström of North Andover, whose father founded the dye works 30 years ago, will manage the dye plant, which is to be opened with local capital. A former local textile manufacturer is planning to manage the worsted mills."

Ben Buttolph visited relatives in Logan, W. Va., at Christmas and then called on Dr. Victor Ray in Cincinnati who is associated with his son, Victor, Jr., as eye, ear, and throat specialists. They have a fine suite of offices on the ninth floor of the Maybelle Carew Tower. He also called on Louis Ferguson, who is Vice-President of the Commonwealth Edison Company, 72 West Adams Street, Chicago. — Sumner Merrick has recently returned from Fort Worth, Texas, to his old home in Hanover, Mass.

Your Secretary passed nearly the entire month of January in Cleveland and vicinity, where he visited his daughter and granddaughter, Katharine, 4th. He also investigated the Ashtabula and Avon Stations of the Cleveland Electric Illumination Company located, respectively, 20 miles west and 58 miles east of the Cleveland Public Square. These stations have a combined normal rating of 290,000 k.w. The Ashtabula Station represents one of the most up-to-date steam-electric power stations in the entire country, having been in operation less than one year and costing over \$11,000,000. He also inspected the Terminal Building on the Public Square, which is 708 feet and 52 stories high; houses 10,000 people and 2,000 automobiles; has 23 railroad tracks entering it 35 feet below the street level, and is designed for a maximum deflexion of two inches at the top story under maximum wind pressure. — BERTRAND R. T. COLLINS, *Secretary*, 18 Athelstane Road, Newton Centre, Mass.

## 1890

Guy E. Emerson has been appointed on the committee "to secure new employment and create jobs" by the City of

Boston Emergency Committee on Unemployment. — William Z. Ripley was one of the speakers at a luncheon at the Twentieth Century Club in Boston, December 18.

Frederick P. Royce is chairman of the Special Gift Committee of the United Boston Unemployment Relief Campaign to raise three million dollars for relief work in the city, in a ten-day drive beginning January 25. Fred is a well-known engineer and financier, and formerly a partner of Stone and Webster, Inc. The committee is to work among persons who are able to give more than one day's pay.

Robert T. Walker died December 24, 1931. Robert was a well-known architect in Boston. For 22 years he was associated with the Church of the Advent on Brimmer Street as master of ceremonies and head of the Guild of St. Vincent for Acolytes. Services were held in the church, and many of his church associates marched in the funeral procession. After cremation, the ashes were taken for burial to Lyme, N. H., the place of his birth. During his long service as master of ceremonies for the Advent parish, Mr. Walker became a familiar figure in the sanctuary of the church, where under his direction the services became known for their beauty and regularity of conduct. He was the founder of the national Guild of St. Vincent for Acolytes and was secretary-general of the order. In professional life, he was an architect, specializing in ecclesiastical art and architecture.

Cyrus C. Babb's home is at Granite Falls, N. C. He is still engaged in Government relief work. — Charles Neave is now located at 20 Exchange Place, New York City.

Charles B. Beasom died suddenly of pneumonia, December 8, at the home of his daughter in Nashua, N. H.

Calvin W. Rice made the arrangements for the joint meeting in Japan for Dr. Kennelley of the Harvard and Technology Clubs. Baron Kaneka, President of the Harvard Club, and Baron Dan, President of the Technology Club, were present.

At the Alumni Dinner in New York, January 19, at the Waldorf-Astoria, our Class was represented by Simeon B. Eisendrath, William B. Poland, and Calvin W. Rice. Charles Hayden was to have been toastmaster but urgent business kept him away. Charlie is a hotel man now, if you would like to know it.

Anyone know the correct address of the following from whom mail has been returned: Elwood Allen Emery, 4638 Lake Park Avenue, Chicago, Ill.? — GEORGE L. GILMORE, *Secretary*, 57 Hancock Street, Lexington, Mass.

## 1894

The Class is again called upon to mourn the loss of two of its loyal members, Ernest C. Klipstein of St. Louis, and Walter O. Scott of Providence. Klipstein, or Klip as we familiarly knew him at class reunions, was a rare and able exponent of his profession, a true gentleman in the finest sense, both in personality and culture. After leaving Technology,

he returned to his home city of St. Louis to enter the practice of architecture, and with the passing of the years quickly rose to eminence. He became not merely one of the outstanding architects of the city, but a leader in its civic life and a power in all movements for betterment and improvement of conditions, both social and architectural.

He was a senior member of the firm of Klipstein and Rathmann. Many of the finest structures of St. Louis as well as of other cities stand to the credit of this firm, and express the fine sense of beauty and proportion possessed by their designers. The members of the Class will not remember Klipstein through the works that have sprung from his brain and hand, but because of his fine character, charming personality and good fellowship, and an indefinable spirit of friendship and coöperation. His fellows were drawn to him intuitively, whether it was a game of golf, a group around the lunch table, or the quiet talk as we gathered to exchange experiences and philosophize on events of interest. If Klipstein was present at a class reunion, as he generally was, he was one of the men sure to add much to the quality of the conversation. It is impossible to express how greatly he will be missed or to put a value on the fine relationships with his friends and classmates. His death occurred on November 8, at St. Louis.

Walter O. Scott died at Providence on December 23, after a long illness. Until last spring, when he retired on account of his health, he was chemist in the Division of Chemical Warfare of the War Department at Edgewood Arsenal, near Baltimore. He entered upon this work in 1921. Scott was a native of Providence, came to Technology in 1890, took the course in chemistry, and received his S.B. in '94. The following year he returned for graduate work and obtained his S.M. He was engaged as a chemist in industrial work for about ten years, and then was appointed milk inspector of Providence, a post which, at the time, involved more technical skill because of the political ramifications and conflict of personalities which had entered into the situation. His career here was for several years a stormy one, but he emerged with at least a moral victory.

During the war period, he was engaged in special work in causes contributing to chemical warfare, and in 1921 he became a member of the staff at Edgewood. Although always a loyal member of the Class, Scott found it difficult to attend all our reunions. He will be remembered well, however, by those who were brought in contact with him in undergraduate days, and by many others who have known him since that time. He had a positive personality, enjoyed argument and political strategy, and entered on causes that interested him with great zeal. He was a member of numerous societies, chemical and fraternal, and especially active in the Masonic organizations. He is survived by his wife, who was Miss Louise Holworth. To her the sympathy of the Class is extended.

1894 Continued

Dr. Robert H. Fernald, who was associated with the Class following his graduation at the University of Maine in 1892, and now Dean of the Towne Scientific School at the University of Pennsylvania, was the speaker at the first Home Coming Day celebration at Orono on November 7. Fernald is a member of the Mechanical Engineering Board for the Chicago Century Exposition next year.

John Howland Gardner, who was until recently President of the New England Steamship Company and later President of the Hartford and New York Transportation Company, has joined the Kearfoot Engineering Company as consulting engineer. — The Secretary had the pleasure of addressing the Chicago Technology Club in November and greatly enjoyed it. A few days later he spoke to some of the Technology men in Dayton. On January 27 he is to be the speaker at a dinner of the Cleveland Alumni, and on the following morning presents a paper at the meeting of the American Society of Refrigeration Engineers. — SAMUEL C. PRESCOTT, *Secretary*, Room 10-405, M. I. T., Cambridge, Mass.

## 1895

Dear Mates: Business life is child's play when compared to the life and trials of a class secretary, though the comparison be made during times like the present. In business one can be either up or down, but when you have inherited a secretaryship you have a different problem. Resolved: secretaries may often be "down but never out."

Therefore, let us all cheer up and with it cheer your secretaries by mailing them promptly your name and address, so you may be counted, at least, among the living.

Alfred Sloan, Jr., came to Boston on January 7 to speak at the Boston Chamber of Commerce luncheon and this was an exceptional event due to the fact that Al is the only man who has been asked a second time to speak before the Boston Chamber of Commerce. Your Secretary was unable to attend this luncheon, as he was celebrating his 29th wedding anniversary, but through the assistance of Frank Bourne and Tommy Booth we are able to quote a few of the pointed excerpts from Sloan's address. Frank Bourne writes the following:

"Many thanks for the invitation to dine at the Chamber of Commerce and hear our classmate Sloan. His address was full of meat and statistics, and lasted over half an hour. I liked particularly his remark — 'Not half as badly off as we think we are.' His talk on industrial relations referred to the equity to his stockholders, the owners of the business; the advantages of a trade that reached 125 million buyers who were all accessible compared with the difficulties of selling in Europe; the hope of not too great a reduction in wages so that the employees would still have buying power."

Technology was well represented in the audience as well as at the speaker's table. Those at the table with Sloan were Dr. Karl T. Compton, Dr. Arthur D. Little '85, and Frank C. Shepherd '92.

Many of our '95 readers will recall the name of Norman F. Rutherford, who was with our class for a number of years but finally listed with the Class of '96. We learn that Rutherford died last October in Dover, N. J. — LUTHER K. YODER, *Secretary*, Chandler Machine Company, Ayer, Mass. JOHN H. GARDINER, *Assistant Secretary*, Graybar Electric Company, Graybar Building, New York, N. Y.

## 1896

The first report from the Myron Fullers, who sailed December 1 for their five months' steamship trip, has been received in the form of a letter which they wrote on December 14 as follows:

"We dropped anchor last night, December 13, at sunset in the circular harbor of St. Vincent, occupying the crater of an ancient volcano entered between high rocks in a break in the old rim. The island is one of ten, all volcanic, forming the Cape Verde Islands, belonging to Portugal and lying 300 to 400 miles off the African coast. From here come most of the so-called Portuguese, the colored descendants of former slaves, found all over Cape Cod and on the fishing fleets of Gloucester and Provincetown.

"It is interesting to speculate that some of those one meets in the streets may be former employees on Plymouth county cranberry bogs. A shipload of returning men from New Bedford is expected hourly.

"The name Cape Verde, or Green Cape, is a misnomer for most of the islands, which are bare, brown, jagged, volcanic mountains, towering to 7,000 feet in some cases and almost without a sign of vegetation. On St. Vincent even the drinking water has to be brought in ships. It is, nevertheless, an important station for fuel-oil and coal.

"The run over was a smooth one of 12 days, the ship rolling easily along under blue skies across the Sargasso Sea, with not a case of seasickness. Flying fish constantly skimmed over the sea. A touch of land was brought to us in mid-ocean, 1,400 miles from the nearest land, when a sparrow-hawk appeared out of the blue and remained with us for several days.

"Twenty-five years ago, returning from the West Indies, it was our luck to rescue 11 men from the waterlogged Norwegian barque 'Gulfport.' She was set afire in hopes that she would not become a derelict and a menace to navigation. Not a word was ever heard of her, and we hoped that we had been successful, but on the present trip, a quarter of a century later, we learned that, kept afloat by her cargo of wood, she drifted bottom side up and covered with barnacles and weeds, for many months, and that our captain had come within ten feet of striking her a year later on a trip to South America.

"This morning, returning from shore, we smelled dust, and a few minutes later the land was almost shut out by a cloud of material brought by the harmattan wind from the Sahara, over 500 miles away.

"Tonight we are off for Senegal on the African coast."

*Telephone Topics*, which is the organ of the New England Telephone and Telegraph Company, contained in its November issue a picture of Henry G. Grush, with a notice of his recent appointment to a new job. A thumb-nail sketch of his life was given so succinctly that it is reproduced here:

"Henry G. Grush recently assumed his new duties as Outside Plant Supervisor on the staff of the General Plant Supervisor of the Southern Area.

"Mr. Grush first entered the employ of the Company as a cable foreman in the Metropolitan Division. In February, 1913, he became chief cable foreman in the Construction Department of the Metropolitan Division and in 1917 he was appointed Construction Supervisor. On September 6, 1919, he was transferred to the General Engineering Department as Cable and Maintenance Engineer.

"During the inventory period Mr. Grush was engaged on appraisal and valuation work and since that time has been associated with the Outside Plant Engineering Department in the capacity of Cable Maintenance and Testing Engineer.

"Mr. Grush carries with him the sincere best wishes of his former associates who tendered him a farewell dinner and a token of remembrance."

On December 29 a voice came over the telephone to the Secretary from Boston which identified itself as belonging to Arthur Baldwin, and made the announcement that said Arthur was in town for a few hours before leaving for New York in the late afternoon. It seems that he was on a trip to this country for a month and had been spending the Christmas holidays with Mrs. Baldwin's people in Newburyport. It was an unexpected pleasure to see Arthur, although the time that he was able to give us was all too brief. He reported that he sees Reg Norris occasionally in Paris, where the latter is the Representative of a German dyestuff company. Arthur's son Edward is with the Bankers Trust Company. Arthur was due to be back on the job in Paris at the beginning of February, but urged especially that any '96 men, and in fact any Technology men, who might be traveling through Paris should look him up, and he guaranteed a warm welcome to all who knocked at his door.

The Secretary saw Dr. Coolidge for a few minutes on January 6 when Coolidge was at Technology in his capacity as member of the Corporation, which was meeting that day. He reported that he looked after Walter Stearns and Karl Pauly as far as his duties would permit him, and they seemed to be getting along all right and doing a good job for the General Electric Company.

The Secretary has frequent contacts with Joe Harrington's boy, who is taking a graduate course here at Technology, and thus keeps fairly close tabs on the old man. The latest report was that Joe's bank was still sound and that he had fully recovered from his illness of last



year and was tackling everything with his characteristic energy. His latest exploit was the development of a method and means of disposing of municipal wastes (sewage and garbage) by mechanical means, the City of Chicago being under compulsion of the Supreme Court of the United States to dispose of all waste by 1937 or suffer loss of privilege to divert lake water for disposal of waste to the Mississippi River system. Joe was asked to study the problem and submit any suggestions he might have. The total matter to be consumed amounts to 6,000 tons of solids a day, borne by 1,200,000,000 gallons of water. He invented and perfected a system for this formidable task and has pushed the development well past the experimental stage. Patents have been applied for and it is hoped that a full-sized working installation will be constructed in the near future. Visions of an industry for municipal waste disposal of the magnitude and type of a public utility take form, but only as pipe dreams. The present holds plenty of research and development problems.

News has just been received of the death, last October, of Norman F. Rutherford in Dover, N. J. Your secretary will try to obtain further details about Rutherford whose whereabouts have been unknown for the past several years. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M. I. T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

### 1898

On January 19, we had a dinner at the University Club for local '98 men and guests. Those present were: Elliott Barker, Blanchard, Ed Chapin, George Cottle, Fred Dawes, Goodrich, Peavey, Bill Perley, Felix Porter, Joe Riley, John Robinson, Charley Smith, Henry Sullivan, M. de K. Thompson, George Treat, and George Wright. As guests were: Professor Phelan ('98 was the first class he taught at Technology) and four sons of '98 — Rudolph Tietig, Jr., and Randolph L. Strickland, fourth year and first year students, respectively, at the Institute; Leslie B. Bragg, as instructor in chemical engineering; and Roy W. Chamberlin, a young friend of George Treat, who graduated from the marine engineering course at Technology last year and is now at Harvard Law School studying admiralty law. George has financed his education, so we have adopted him as a son of '98.

Bill Perley has been manufacturing lactic acid in California for several years past, but he has just returned to these parts and expects to stay. — George Cottle, since he retired from business some few years ago, has given most of his time to travel. He has been through the South Sea Islands, India, Ceylon, Burma, Siam, China, and recently returned across Siberia. He took reels and reels of motion pictures everywhere except in Siberia and Russia, and he brought his films and projector to the dinner. He did not just take pictures; he caught the spirit of the countries and he brought it to us in his

talk. Altogether we had a great evening, seeing such an inspiring sample of our second generation, getting an idea of the present economic situation from listening to Peavey and Treat, traveling with George Cottle, and lastly having a general discussion of sociological questions arising from George's observations.

We have before us a three-column article in the Boston *Herald* of January 4 with a picture of Leroy D. Peavey, entitled "Babson President Predicts Upward Trend During 1932 in Business and Securities" and written by Peavey, President of Babson Statistical Organization. Of course, articles of this nature by Babson or Peavey are regular weekly or oftener features of the newspaper syndicates, even although we only mention them occasionally in the class news. These articles always give sound common-sense viewpoints for investors and business men.

George I. Fiske writes that he is very busy working out details for the new building of the Christian Science Publishing Society. This building will occupy the entire area between Massachusetts Avenue, Falmouth Street, Norway Street, and Clearway Street, and will be 600 feet long. Forty-seven buildings have been razed to make room for it.

We have already mentioned in these notes Paul Johnson's cruise last summer to Alaska in his motor cruiser *Seyelyn*, the wreck of *Seyelyn* in Alaskan waters, and his exchange of the *Seyelyn* for the 107-foot Diesel cruiser *Cora Marie*. Following is part of the log of his voyage:

"Your note of September 22 was received in due time, but have been so busy trying to catch up with my work after the long absence during the summer, that I have not had time to answer it properly. I do not know whether I will be able to condense a story of my cruise into small enough compass for use in the class news, but will make a try at it, so here goes.

"The 71st cruise of motor cruiser *Seyelyn* started from Long Beach, Calif., Thursday, April 23, 1931, in a power cruiser race to San Francisco. It was rather rough during the first leg of the race to Santa Barbara, but after that not so bad. The race ended in San Francisco about noon Sunday. *Seyelyn* was heavily penalized for running too fast and got third place only. I and my amateur racing crew returned home by various methods of transportation, leaving *Seyelyn* in San Francisco, where the crew varnished and painted and got her in good condition for a cruise to Alaska.

"On Wednesday, May 20, 1931, after several days of very stormy weather, with William Rathbun of Pasadena as a guest and two paid hands, I set out in *Seyelyn* for the great adventure. For three hours after leaving San Francisco, it was very pleasant sailing; and then we ran into strong northwest winds and seas running 12 feet high, and had to slow down to prevent pounding. This continued all night and all Thursday morning, so finally ran for shelter and anchored at noon in Shelter Cove. We made 190 miles in 26 hours and were a very tired crew.

## THE TECHNOLOGY REVIEW

"Friday morning we started out at 5:50 and at 10:42 crossed the Bar into Humbolt Bay, riding like a surf-board on a breaker; ran up to the *City of Eureka* and took on fuel, and lay there until 1:00 p.m. Saturday, when the Coast Guard said it would be safe for us to cross the Bar.

"The seas were moderate during the afternoon, but Sunday morning we again ran into strong winds and big seas, and after a very tiring run of 28 hours, put in behind Cape Lookout on the Oregon coast for a rest. Left there at 1:00 a.m. and had a rough passage across the Bar at the Columbia River, docking at Astoria at nine. There we cleaned up the ship which was in pretty much of a mess, dried out bedding, and took on fuel. We spent five days on the beautiful Columbia River, going 100 miles up to Portland and 36 miles beyond that with a large party of cousins and guests on board. The Columbia River above Portland is very beautiful, but requires great care in navigating as the sand bars are constantly shifting.

"We again left Astoria on Sunday, May 31, at 7:10 a.m. We found it moderately rough, but not breaking on the Bar. Seas were again running about 12 feet high.

"We ran into Gray's Harbor, Washington, at 1:25 p.m. and anchored among the fishing fleet. Monday morning, June 1, we left Gray's Harbor at 5:00 a.m. and had a rougher and more dangerous passage across the Bar than I ever want to experience again.

"At 4:00 p.m. we entered the Straits of Juan de Fuca where with following seas we could make better time, and at 8:40 p.m. docked at Port Angelus with just sufficient light to find our way in a strange harbor. We did not leave until 12:30 p.m. the next day, and cruised leisurely along the shore, exploring bays and passages until 6:00 p.m. when we anchored in Oak Bay.

"Wednesday, June 3, we left at 8:30, and after the novel experience of going through the government locks in the ship canal we reached Lake Union dry dock in Seattle. There *Seyelyn* was put in dry dock to be cleaned, painted, and varnished, and have minor repairs made.

"On Monday, June 22, Charles E. Sydnor, a teacher in the Pasadena Junior College, arrived by steamer. As he and Mr. Rathbun were to be my guests for the cruise to Alaska, we were about ready to start, but as there was to be a race to Victoria, the next Sunday, I decided to wait and go into the race.

"Wednesday, June 24, Mr. Peterson, the branch office manager of Johnson Service Company in Seattle, took Mr. Sydnor and me in his car up on Mt. Baker where we had the novel experience of glissading down snow slopes. The snow was ten feet deep in the road beyond the Lodge and was being cleared away by blasting and motor shovels.

"Sunday, June 28, we started in the race to Victoria at 9:40 a.m. There was only one other cruiser in the race, the 115-foot *Sueja III* owned by Capt. Jas. Griffith of



1898 Continued

Seattle. *Seyelyn* was formerly the first *Sueja* and when he had this boat built I bought her from Capt. Griffith four years ago. We finished the race at 3:22 p.m. off the Royal Victoria Yacht Club, Cadboro Bay, Vancouver Island, beating *Sueja III* by several minutes, thereby winning the Hathaway Motor Boat Trophy.

"Wednesday, July 1, we left at 5:50 a.m. and ran up the heavily wooded, mountainous coast, 98 miles to Princess Louisa Inlet, where we tied up at the head of the Inlet at 2:15 p.m. This is one of the most beautiful places I have ever seen. The inlets along this coast are much like the Norwegian fjords. This particular one is from one to two miles wide and ten miles long, and the mountains rise sheer about 3,000 feet and then back of that up to 6,000 or 8,000 feet, and the upper parts are snow covered. There are hundreds of waterfalls falling down the cliffs — some of them directly into the water. It seemed to me very much like going to Yosemite in a boat.

"The next day we started on, running 103 miles, and tied up to a boom of logs below Seymour Narrows at 4:55 p.m. I was pilot this day, Mr. Sydnor not felling well.

"From then on we ran every day among the thousands of islands and through narrow passages and narrows, some of which had to be taken at slack tide on account of the strong currents.

"We reached Prince Rupert, B. C., about noon on July 6, and Ketchikan, Alaska, at 5:00 p.m. on the seventh. Remained there until 2:00 p.m. on the ninth, when we continued up the Tongass Narrows, and anchored at 8:20 p.m. in Steamer Bay. We were now getting so far north that it did not get entirely dark all night.

"Monday, July 20, we left Goddard at 7:45 and ran the ten miles to the head of Redoubt Bay. Here is a dam, partly natural and partly artificial, holding back the water of Redoubt Lake. The Russians built the dam and had a grist mill here from which flour was shipped to San Francisco during the gold rush. We fished in the lake and picked blueberries until noon, when we started back to Sitka.

"Twenty-six minutes later in mid-channel where the chart shows ten fathoms of water, our keel scraped over the top of a pinnacle rock, while we were going full speed. The rock jammed the rudder up into the hull and bent one of the propeller shafts. The boat commenced to leak badly and it looked as if we were in a serious position. We could run the port engine, but could not steer. Keeping the engine running, however, kept the water from rising above the floor, as the power bilge pump is on that engine. Fishing boats were going by a half-mile away and we tooted the whistle and shot off a whole box of blank shells in the yacht cannon without being able to attract their attention, and were just about to beach the boat when a fishing boat finally arrived.

"We were towed the eight miles to Sitka. The job requiring three hours and it then being high tide, we went on to a

cradle, there being no dry docks or marine railways in Sitka. At low water that night, the leak in the hull was stopped, so that when the tide came in again *Seyelyn* floated. At the next low water we learned that it would be impossible to repair the damage to the rudder and propeller shaft there. Finally, after much telegraphing to the Board of Underwriters, I arranged to be towed to Ketchikan by the big halibut boat *Sitka* which happened to come in preparing to go fishing. We left Sitka lashed alongside the halibuter and using our own port engine, so that we were traveling at eight knots, which is the top speed of the halibuter itself. Thus we were furnishing our own motive power and the big boat merely served to steer us. Fortunately, it was smooth all the way so there was very little chafing.

"We left Sitka at 5:05 p.m. July 22, and at 8:55 p.m., after running 27 miles, we dropped anchor as the tide was not right to go through Sergieus Narrows, but on the 23rd we left at 3:00 a.m. and ran steadily until 11:20 a.m. on the 24th, having been towed 272 nautical miles. Late in the afternoon we went on to the marine railways.

"By July 28 everything was going well on the repairs, and it was evident there was nothing more that I could do there. I had received a telegram from Hon. W. C. Shelly of Vancouver accepting my offer to buy his *Cora Marie*, trading in *Seyelyn*. So at midnight I left on the big Canadian National steamer *Prince Henry*. I arrived in Vancouver on the 30th at 10:30 a.m. and had a conference with Mr. Shelly and marine attorneys and arranged all the details of the transfer of *Cora Marie* to me.

"The *Cora Marie* is a 107-foot heavily built Diesel cruiser launched in 1930, and just my idea of what a cruiser should be, capable of going anywhere, with a 4,000-mile cruising radius.

"I made a trip to Seattle on insurance matters and then returned to Vancouver where I stayed on *Cora Marie* and every day took lessons in handling the big ship.

"Meanwhile, my guests and crew had stayed with *Seyelyn* in Ketchikan and the repairs were completed. They left there at 6:35 a.m. on August 9 and reached Vancouver at 7:00 p.m. on August 12, making very long runs. So ended the last cruise of *Seyelyn* under my ownership. The cruise lasted 111 days, including the stopovers at San Francisco and Seattle, during which time she covered 4,193 nautical miles. I ran her 12,230 nautical miles in the exactly four years that I owned her.

"Thursday we transferred personal belongings from one boat to the other and Friday Mr. Shelly took *Seyelyn* to Seattle and I took *Cora Marie* where we completed the exchange of boats, *Seyelyn* being American Registry and the *Cora Marie* British.

"The cruise of the *Cora Marie* down the coast from Seattle was a very comfortable and enjoyable one, but without any particular incident. We left Seattle at 6:00 a.m. Saturday, August 22 and, ex-

cept that we had to anchor in the straits for two hours on account of dense fog, we ran steadily to San Francisco, arriving at 10:30 a.m. on the 25th, our running time being about three days and two hours for the 785 nautical miles.

"That evening Frank and Mrs. Coombes and their son, Preston, had dinner with us at the Yacht Club, and I showed them all over *Cora Marie* which accounts for the note you received from Frank.

"We left San Francisco, Wednesday, August 26, at 8:20 and reached Santa Barbara at 11:50 the next day. There we stayed the rest of the day and all of Friday to clean the ship up for our home coming. Left Santa Barbara Saturday, August 29 at 6 a.m. and reached the California Yacht Club, Los Angeles, at 2:47 p.m. where all the folks were down to welcome us, and were very much pleased with the new ship."

Lester Gardner writes: "I am sorry that I cannot get over for the dinner. I have been through much like everyone else and am now selling apples hoping that the hot weather will last so that my old clothes will keep me warm through the winter. But see what Charley Wing is doing. The plutocrat." He enclosed a post card from Charley from Bermuda with a picture of the bar of the Royal Prince.

Charley Hurter dropped in on December 22. He has of late been supervising the use of explosives in tunnel work in West Virginia. — We note that John S. Bleeker has been appointed manager of sales at Lukenweld, Inc., a division of the Lukens Steel Company, Coatesville, Pa. Since he graduated from Technology, most of his activities have been confined to the executive management of many enterprises for Stone and Webster, Day and Zimmermann, and Bates, Inc.

We have the sad news of the death of the following classmates: Philip H. Dater, July 12, 1931, Portland, Ore.; William D. Blackmer, August 4, 1931, Los Angeles, Calif.; Outerbridge Horsey, October 26, 1931, New York, N. Y. We also regret to report the death of Percival Lombard on January 22. Lombard was sick at the time of our last reunion, but he took an interest in helping with the planning and some of us remember on that occasion stopping in to see his plantation at Forestdale on Cape Cod. The Boston Transcript of January 23 gives the following account:

"Percival Hall Lombard, who died yesterday at his home, 619 Boylston Street, Brookline, was the son of Jacob Hall and Mary (Swift) Lombard, and was a descendant of Governor Bradford and Stephen Hopkins. He was graduated from Harvard with the Class of '95 and three years later from Technology.

"He was deeply interested in antiquarian research work, centering much of his time on excavation and reproduction of the old Pilgrim Dutch trading post at Bourne. At the time of his death he was engaged in preparing an article on the trading post for *Old Time New England* the magazine of the Society for the Preservation of New England Antiquities.

1898 Continued

"Mr. Lombard was a member of the Society of Mayflower Descendants, President of the Bourne Historical Society, and a member of The Country Club, the Harvard Club, and the Union Club."

Dickson Q. Brown has just sent in a paper containing the announcement of the death of Lewis Starr Streng, Vice-President in charge of operation, Louisville Gas and Electric Company, Louisville, Ky., on December 24, 1931. — ARTHUR A. BLANCHARD, *Secretary*, Room 4-160, M. I. T., Cambridge, Mass.

## 1899

Scant and meager is the news of '99 men this month. Philip Burgess and Everett Hinckley have new addresses. Burgess receives mail now at 568 E. Broad Street, Columbus, Ohio, and Hinckley at 24 Tenney Avenue, Mamaroneck, N. Y.

Gardner Barry wrote from Sandwich, Mass., of a skating bout that left him lame but happy after the first soreness wore off. The holiday season at Sandwich was a welcome change and on Twelfth Night there was a merry party at his home to which came Nellie Coombs and Grace Stratton and a party of their friends. Gardner expressed the wish that more of the old friends might have been present, and I'm sure the old friends reciprocate.

Newton D. Benson passed away on November 18 at his residence 3 Circuit Drive, Edgewood, Providence, R. I. — W. MALCOLM CORSE, *Secretary*, 810-18th Street, Washington, D. C. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

## 1900

The holidays were brightened by Christmas cards from the following: Patch, Bowditch, Howe, Crowell, Fitch, Allen, Beekman, Westcoat, and Charlie Smith. Thanks to all.

The day that General Depression made his meanest gesture, the pen pusher was on his way back from Long Wharf, having found out that starting times were necessary, when who should come along but Ziegler, full of pep, good cheer, and stories and proceeded to prove that it was no time to end everything. If it should be the readers' good luck to meet up with Percy, get him to tell you the one about Daniel in the lion's den.

Frederic E. Everett, Commissioner of the New Hampshire State Highway Department, was honored at Salt Lake City in October by being elected President of the American Association of State Highway Officials. The current issue of the organization carries a full-page photo facing toward the east, as ever. While we are on the subject of the Everett family, it is interesting to note that Douglas, Fred's son, playing on the University Club hockey team again this year, has been selected as one of the forwards in the U. S. Olympic games.

A recent issue of the Northwestern University Alumni news had a very interesting article, parts of which follow: — "In a lecture before a group of 300 scientists and physicians at the McKin-

lock Campus on July 22, Dr. Arthur I. Kendall, Professor of Research Bacteriology of the Medical School, made the first announcement of a new method for the isolation and cultivation of bacteria in the filterable state. It consists of a new food, called 'K medium' for use in artificial nourishment, by means of which bacteria are changed from invisible to visible form. This announcement is considered another great stepping stone on the path of the microbe hunters, since the way is now opened for a more thorough and exact knowledge of many diseases through a better understanding of the living organisms which cause them. Medical men who are acquainted with Dr. Kendall's recent contribution regard it as a great forward step in bacteriology. Dean Irving S. Cutter of the Medical School sees in the discovery something 'as startling to the scientific world as were the discoveries of Pasteur'." Kendall was in Course VII.

Quite a good-sized ray of sunshine beamed into the sanctum recently in the form of our Class Poet, one Howe, who gave every evidence of the fact that the air in Littleton is much better than it is in Boston. A few days later his unique Christmas card showing the house was unfolded and all in all he is the envy of the Class, cider included. — C. BURTON COTTING, *Secretary*, 111 Devonshire Street, Boston, Mass.

## 1901

From the Washington *Post* of late December I learn that Allen McDaniel has been elected President of the Washington Society of Engineers. This is apparently a Technology preserve as Allen's three immediate predecessors in office were Truscott '07, Hunnewell '97, and Parker '99. The motto of the Society is "No foreigners need apply." Allen, by the way, has been a somewhat prolific author, having published three books on various phases of excavation and a good many articles on divers aspects of his varied and extensive engineering experience. He was the first recipient of the Wason medal of the American Concrete Institute, just why, I do not know.

Fred Sexton, who for many years has been Director of Technical Education in Nova Scotia with headquarters in Halifax, was married in late November to Miss Anne Smith. The present Mrs. Sexton was formerly secretary to the President of Acadia College.

Bill Sweetser, still collecting antiques at Orono, Maine, and professing mechanical engineering at the university, writes in as follows: "Have seen more or less of Ned Seaver this summer and fall and finally placed an order through his office for a Foster-Wheeler condenser for the Crosby Laboratory" (adv.). Apparently Neddy may be slow, but he is a certain salesman. Bill resumes, "Roger Wight was in town during September on business and spent an afternoon and evening with me." He doesn't say what Roger was selling but mentions pathetically that they played contract during the evening. With Roger's mastery of the Cul-

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bertson-Lenz system of organized mayhem, the quietude of peaceful Orono must have been considerably dented. The contiguity of Bangor, however, to say nothing of the Niben Club, makes a trip to Orono something to be sought after. (There is a canoe club there, too, about which pleasant things can be said.)

I have had a blow — I am free to confess it — and I am but slowly recovering from the trauma. Frederick Gardner Clapp, XII, well known as a consulting geologist, petroleum engineer, Mesopotamian aviator, and international tramp, has apparently settled down at last for he sends me as his present address one that was given me some months ago. There is something wrong in the oil business or else Freddy has looked at all of the oil fields in the world and from now on writes his professional reports on the basis of former notes. This last seems more probable. The family are said to be looking forward to meeting father, having heard many pleasant things about him for the past two decades.

Charlie Auer, who is still patrolling the Mexican border with occasional detours to Juarez, has just been elected President of the El Paso chapter, Reserve Officers Association. The local club has just entertained Dr. Tryon in his swing around the country and Charlie regarded him as a great success as a visiting fireman.

Ted Brigham sent in a note a short time ago but was apparently in an emotional mood when he penned it and the sheet is obscured with concealing blots and occasional blisters which I ascribe to a lachrymal source. He says he has no change, there ain't no interesting news, California is a long way off — this does not seem to me to be an unmitigated curse — and that he was busted wide open by not attending the Thirtieth Reunion. His saccharine vocation, however, is unaltered and he continues to lavish sweetness on all and sundry.

Arthur Hayden, with an ill-concealed venom which I am not wholly able to understand, writes to inform me that he is not yet mentioned in Who's Who in the Cemeteries.

And thus depression hits us all. In my next letter I am going to send you, in condensed form, my panacea for the present business depression, which in all modesty I will concede is far superior to anything that has yet been given publicity. Based on the theory of relativity, reviving the early frugality of New England hybridized with the opulence of southern California, and with a leaf on gold digging from Mr. Hoover's own book, it contains elements of novelty which will appeal or irritate; both are salutary.

And as an epithalamium remember the 1934 Reunion. — ALLAN WINTER ROWE, *Secretary*, 4 Newbury Street, Boston, Mass.

## 1902

Here is a cheerful note — the Vermont Marble Company has so much business that they have had to put up an extensive addition to one of their mills in Proctor.



1902 Continued

It looks as though Red had been hustling around and breaking a hole through the general conglomeration of business. Incidentally, in order to have the job done right, Red has placed the order for this new mill with the Sawyer Construction, so Adrian is another '02 man who has really got some business.

At the dinner of the Technology Club of New York on January 19, there were present Vice-President and Mrs. Kellogg, Ex-President and Mrs. Place, Mr. and Mrs. Jack Fruit and Miss Esther, and Frank Montgomery and his son-in-law. Vice-President Kellogg reports that a good time was had by all.

Dana McLean Greeley of Lexington, Mass., eldest son of our redoubtable classmate, Roger, was married December 27 to Miss Deborah Webster, also of Lexington. Young Greeley is pursuing his studies in the School of Theology at Harvard University, having taken his AB degree at Harvard last June. The young couple are residing on Irving Street, Cambridge. Roger's younger son, Roland Greeley, also graduated from Harvard last year and is now taking graduate work in city planning at the University.

The younger generation is making progress all along the line, as we have just heard of the engagement of Austin A. Patch, younger son of our classmate Claude, to Miss Zoa Newhall of Stoneham. — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

## 1904

As usual the amount of material for these notes is rather small but quite interesting.

The following clipping from the Boston *Evening Globe* of Dec. 26, 1931, was accompanied by a picture showing Mr. and Mrs. Kalmus standing in their candle-light window in their home in Beverly Hills, Calif. I have not seen Herb for some time and from the picture it would seem that he has put on some weight in the interim. "The custom of burning candles in some windows during the Christmas season has been introduced at Beverly Hills, Calif., by Dr. and Mrs. Herbert T. Kalmus, of Boston.

"Both Dr. and Mrs. Herbert T. Kalmus are well known in Boston and vicinity. Dr. Kalmus was born in Chelsea less than 50 years ago, and is a graduate of the Massachusetts Institute of Technology. He is president of the Technicolor Motion Picture Corporation with laboratories in Boston and Hollywood.

"He has traveled all over the country and he has sufficient degrees from various colleges and universities all over the world to start a small alphabet of his own. Mrs. Kalmus is a color expert too, one of the few throughout the country. They make their home on Bay State Road, this city."

A clipping from the Portland (Maine) *News* of December 15, 1931, gives us some information regarding one of our classmates from whom we seldom hear. "William F. Goodwin, the dean of auto-

mobile dealers in Biddeford and Saco, can point to almost a quarter century in the business. He entered the industry when it was in its infancy, at a time when real courage was needed for a plunge into what was regarded by most as an over-emphasized fad that would soon vanish.

"Starting on a small scale, Mr. Goodwin has built up one of the largest automobile businesses in York County.

"Mr. Goodwin was born in Biddeford and is a graduate of Biddeford High School and the University of Maine. He is also a graduate of the Massachusetts Institute of Technology.

"Upon his graduation, Mr. Goodwin entered the electrical business in Biddeford. It was not long, however, before he saw the possibilities in the new industry and entered into the automobile business where the first National store is now located on Main Street, near Harmon's Corner.

"With the continued growth of the automobile, Mr. Goodwin was forced to seek larger quarters for his business and some time ago constructed the large and modern building which today houses the Biddeford Motor Mart.

"Mr. Goodwin is prominent in local, civic and fraternal affairs, being a member of all the Masonic bodies as well as vice president of the Biddeford and Saco Chamber of Commerce. He is also a charter member and a former president of the Biddeford and Saco Rotary Club.

"Mr. Goodwin is married, his wife being the former Rose Deering, the daughter of the late John M. Deering, former cattle commissioner of Maine and lives at 435 Main Street, Saco. One daughter, Dorothy A., a graduate of Thornton Academy and Smith College, is a student in the Boston College School of Interior Decorating." This clipping was accompanied by a photograph of Bill which was a very good likeness of him as I remember him.

As many of you will doubtless remember, Bill was one of the quartette, the other three members of it being George Fairfield, Gus Hill and the late Toxey Dow, and what acts of devilry this quartette used to think up for the entertainment of the rest of the class! Fairfield seemed to take peculiar delight in harrassing poor Arlo Bates in his English lecture.

I have very distinct recollections of Bill Goodwin as the cornet player in the old freshman band, the first of its kind. Fairfield also played in the band, performing on the bass horn, to the edification of everybody in his vicinity.

Sometimes I have an inclination to sit down and write a book of reminiscences on the experiences of the Class of 1904, and if more material for class notes is not forthcoming in the future, I may be forced to do this in order to maintain our space in *The Review*.

Currier Lang has been in this vicinity for some time in a search for some industry with which to occupy his time. I had lunch with Currier and Mert Emerson recently and at that time he had been unable to find such an opening as he desired. — Joe Haraden was in Boston

spending the Christmas holidays and we had lunch together and spent a very pleasant afternoon, during which we attempted to play a little indoor golf at the University Club. We enjoyed it, but believe the outdoor variety is preferable.

I hope that this issue of notes finds you all well and that it may possibly have the effect of moving you to communicate with me with reference to some of our classmates from whom I seldom hear. — HENRY W. STEVENS, *Secretary*, 12 Garrison Street, Chestnut Hill, Mass. AMASA M. HOLCOMBE, *Assistant Secretary*, 3305-18th Street, N.W., Washington, D. C.

## 1905

Harold Hixon emerges with: "Your letter of inquiry about my existence came as a pleasant surprise after these many years of apparent absence from the roll of active alumni. It does seem strange, though, that I should be so eager to find the reports on 1905 in *The Review* each month, and how much pleasure I get in reading about the good things which have happened to men I once knew.

"I was quite pleased with myself a few years ago when I got into the same elevator in the Palmer House in Chicago with Hool and could remember his name immediately when I hadn't seen him since 1905. He was kind enough to say that I had saved more of my hair than he, but couldn't refrain from commenting on how white it was. I have visited Tech only once since the dedication of the new buildings, and then only during the summer vacation so it seemed rather desolate.

"For the past 21 years I have drawn my pay checks from various subsidiaries of the New Jersey Zinc Company and even now they come with reasonable regularity. Some people seem to believe that my birthplace was in a zinc furnace retort.

"Just now my efforts are not strictly metallurgical, but the real job is in trying to fill the dinner pails of 500 men, and supply milk to their youngsters, when there is work for only 250. If we are successful this winter, we will have accomplished much. For statistical records I have the title and duties of Superintendent of the Mineral Point Zinc Company at Depue, Ill."

According to the program of the International Coal Conference in Pittsburgh, "George I. Rhodes is Vice-President of Ford, Bacon, and Davis of New York City. As chief engineer of this firm, he has been connected with the construction of some of the most extensive pipe-line systems in this country. Since his graduation from the Massachusetts Institute of Technology in 1905, he has been engaged in work closely related to public utilities. 'Natural Gas and Bituminous Coal' is the subject of the paper he will deliver." And which he will probably deny.

The following letter from Jack Flynn arrived in November: "This is just a note to inform you that I am back in the States, having arrived about two weeks ago from London. I rather expect to stay here in my own country for the



1905 Continued

winter, although there is a possibility of going over to England again for a short time in February to handle some legal matters in which my company is interested.

"My sister and I spent the summer in London, but managed to get around and see the beauty spots of Dorset, Surrey, Sussex, and Kent. I understand and appreciate fully why Englishmen are so proud of their country. It certainly is beautiful and worthy of the strong fight they are putting up to keep the shadow of Communism, which is stalking across Europe, from blotting out the little bit of sun that still shines on Merry England.

"I made several airplane flights across England, principally toward Holland, where we had considerable business this summer, and could tell you quite a lot about the geography of the Lowlands. Incidentally, on the last trip from Croyden, my plane carried a half ton of gold in bars on an order from a bank in Amsterdam. The gold was packed in small boxes and scattered about the passenger compartment, quite without guard, and I developed a contempt for the stuff, which seems absurd now, since I arrived back home and found the enormous surplus which Europeans blame us for hoarding is quite safely locked up or buried, or totally exhausted; anyway, it certainly is non-evident.

"I am rather amazed at the extent to which this shadow of depression covers our own country. Of course I have met up with it around the map, but did not, and do not yet, see any reason for a country as young and as strong, and as rich in natural resources as this, to be so profoundly pessimistic about its present and its future."

A note from Grove Marcy reads: "Contacts with '05 men seem to have set into a pattern. I see Hub Kenway frequently and get a bill from him now and then for patent work on some jim-crack. Perkins mit frau gave Marcy mit frau a sound drubbing at badminton lately. A card from Bill Spalding at Christmas struck a responsive note when he told of his two boys outfitting for a week at winter Scout Camp, both for the camping we used to do together, and because I am getting quite a kick out of scouting with my own youngster. Harry Wentworth is one of the strong men in Scouting in Newton, and getting to be quite a factor in the community."

Badminton. What's that? A sort of mature battledore and shuttlecock for middle-aged folk too slow for ping-pong? Your secretary has a thought and says, "I recall, while in high school, a large set of sports books called *The Badminton Library*. I had studied the volume on Figure Skating. (Ever see it, George? George Jones is our most expert figure skater. He waltzes and breaks partners' ribs.) I was trying to develop then as a figure skater, worked at it some with Hub Kenway on Crystal Lake, Newton Center. Neither Hub nor I was a Maribel Vinson.

"When in London in 1904, my father took me to call upon an English friend who lived in one of those old and pic-

turesque lodgings somewhere near The Bank. My eye lit upon the Badminton Library. I said to our host, 'I was much interested in one of those books'. 'Which one,' said he. 'Figure Skating'. 'I wrote it'. And it was true. I was in the presence of the master." Which has nothing whatsoever to do with the Perkinses beating the Marcys.

One day your secretary had some time in New York and called upon Hallett Robbins at the office of the Oriental Consolidated Mining Company only to find that he had been for several months in the west. His address is Box 404, Glendale, Calif. We were shown his photograph. The most startling change was the absence of the mush with which he was adorned at graduation. Next we tried Ralph Whitcomb, thinking that he might have returned from Russia without publicity. He is still over there, care of J. G. White & Company, Ltd., 9 Cloak Lane, Cannon Street, London E.C. 4. We talked with his former secretary hoping to get some inside stuff and she insisted four times that he was "very busy." Well trained. Then we tramped down to 120 Wall Street, in the rain, to see Frank Drake but he was in conference. Not much luck that day.

Harry Nabstedt reports back in Davenport, Iowa, where his address is 1028 West 9th Street. — Carl Danforth was playing golf, way up in Bangor, the middle of January, which sounds like a record. — Ros Davis admits tennis at about the same time (indoor). — Ralph Hadley intimates that he is playing tennis but fails to explain whether it is in or out. — A Christmas card from Bill Motter shows a change of residence to 980 Edgewood Avenue, Pelham Manor, N. Y. — Frank Elliott says that, due to the U. S. Tariff, he is no longer making his annual buying trips to Czechoslovakia.

Can somebody furnish a clue to the whereabouts of any of the following who have been on the list of missing for several years? At last report Eugene Lombard was at the Park Works of the Crucible Steel Co., Pittsburgh. Ned Jewett's last address, from which mail has been returned, was 80 Haven Avenue, New York City. Harry Atwood was for a time in Monson, Mass., manufacturing airplanes or airplane parts. He seems to have left. Frank Webster was last with the Sykes Company, Chicago, but a letter is returned with "moved left no address."

Here's another one from the *Boston Transcript*, of December 14. It would pay us to subscribe — and read. "E. W. Wiggins, 53-year-old aviation enthusiast, qualified for his Federal private pilot's license at the Rhode Island State Airport in Providence last week. Mr. Wiggins, who is head of the E. W. Wiggins Airways at the State Airport, also has bases at Fitchburg and Framingham. For several years he has been interested in flying, but has always been too busy to take it up seriously. All members of his family fly consistently as passengers in any of his 11 airplanes. Mr. Wiggins is thought to be the oldest holder of a Federal license in New England."

Another sad record. A card from his son reports the death of Stuart Wells Benson in Pittsburgh on December 23, 1931. Stuart was born in Manlius, New York, on June 5, 1881, and prepared for Tech at Dedham High School. He played on the Mandolin Club, was manager and leader of the Banjo Club, took part in one Tech Show and was a member of K<sub>2</sub> S.

After graduation, he was for a year with The Industrial Laboratories in New York, then with the Tramway Engineering Department of the Trenton Iron Co. When the American Steel and Wire Co. took over the plant, he became Assistant Tramway Engineer at Trenton. In 1930 he was Field Engineer, Aerial Tramways, San Jose, Calif., and, in the 1925 Register of Former Students, Mechanical Engineer, American Steel and Wire Co., Rankin Works, Braddock, Penn. From our Ten Year Book, we find that in 1916 he had four children. He was buried in Manlius, N. Y. — ROSWELL DAVIS, Secretary, Wesleyan Station, Middletown, Conn. SIDNEY T. STRICKLAND, Assistant Secretary, 20 Newbury Street, Boston, Mass.

## 1906

As news from Hawaii seems to be the vogue just at present, we shall open our column by producing a letter of Syd Carr's: "I was quite agreeably surprised to notice the amount of space you devoted in the November issue of 'Technology Review' to my name and the small part I played in our Class Reunion on Cape Cod this summer. I certainly didn't expect to be featured to the extent that you and probably Ned Rowe apparently deemed it advisable to do so, and appreciate very much the mention of my name as it may tend to bring back to the minds of some of our classmates, who were not there, that a man by the name of Syd Carr was a member of the Class 25 years ago."

"Since my return here I have seen Bill Furer and endeavored to give him a mental picture of some of our doings at the Reunion and the fellows who were there, but I find that many of the events of that happy occasion have passed out of my memory but were nicely brought back again by your write-up in the class notes, which I will now carefully preserve for future reference."

"We certainly all had a good time and I, for one, was very glad that I came the distance I did for the purpose of meeting the fellows again and renewing old friendships. I stopped off at Minneapolis on my way west and had a day with Cy Young not to mention the night I had with him, and also stopped at Abe Sherman's house in Fitchburg when I was up there before leaving the East. I didn't have the pleasure of meeting our Class daughter in Abe's house, as she was away, but Abe showed me a picture of the beauty. This will serve to extend to yourself, Ned Rowe, and the rest of the boys who made my stay so pleasant during my visit in the East, my good thanks and wishes for a merry Christmas and happy and prosperous New Year."

1906 Continued

With further reference to this same subject, we are indebted to Abe Sherman for a letter he received from Syd Carr, portions of which are as follows: "I am living on the other side of the Island, at the present time, from Honolulu which is about 15 miles from town, where we have a house on the beach and a nice nine-hole golf course — also plenty of Hawaiian 'cheer' — so if Fred Dillon '93 shows up, tell him he will be well taken care of. I stopped off at Minneapolis on my way West and spent a day and night with our old pal Cy Young. Unfortunately, Mrs. Young was not on deck, as she had flown away with her son to some camp in the woods which he was attending, so I did not have the pleasure of meeting her. Cy seemed to be the same old boy as during our college days but, in addition, he has attained a position of great prominence in Minneapolis and I know is considered one of the leading business men of the Community."

"After leaving Boston I, of course, looked up Herb Whiting and spent a couple of days with him at his home in New Jersey, playing considerable golf with Alma and himself. One night we drove over to Englewood and called on my old chum, Burnell Poole, at the address which you gave me, and he was tickled to death to see us. As you know, Burnell is well known as one of the foremost artists, especially in marine etching work of the United States and he took us downstairs and showed us all of his paraphernalia for performing this work, as well as explaining to us a new process which he has developed which smooths and shades out the lines which are ordinarily visible in the usual line of etchings. I guess you heard of Burnell's illness last fall, which rendered him inactive for a long period of time, but I was happy to find him on the road to recovery and he is gradually getting back the use of his valuable right arm and hand. I met his son and his wife, whom I liked very much. I can assure you that although Burnell has passed out of the engineering line of work and has perhaps drifted into a mode of life apart from engineering, he still has a keen interest in engineering projects and while he has not kept in close touch with the Class, it does not by any means signify that his interest and friendships with his various fellow classmates have in any way diminished."

"During the War Burnell was commissioned by the United States and British Governments to prepare etchings of various battleships and crafts of both navies, which he did with very good credit to himself, and just before his illness he received a commission to do the international yacht races which took place at Long Island, which unfortunately he had to give up."

Those who read the class notes for other classes will pardon us for reproducing this item which appeared under the 1907 Notes in the January Review: "Harry Moody wrote me recently thus: 'Have just finished reading my Technol-

ogy Review for November and particularly the very successful Twenty-Fifth celebration pulled off by '06 — total registration, 81. Now, Nick, you know we can't let that '06 bunch put anything over an old '07. We've just got to make our Twenty-Fifth the biggest and best ever.'" Apparently, we gave 1907 something to shoot at. The Secretary and Mrs. Kidder have derived much pleasure from going over the Christmas cards received from classmates and are happy to be thought of by so many members of the Class at Christmas time. Charlie Wetterer is fully established in New York by this time and is living at one Fifth Avenue. The Wetterers write that they have visited the Pulmans who are living in Mountain Lakes, N. J.

Anyone know the correct addresses of the following from whom mail has been returned: Capt. George F. Hobson, c/o Departmental Quartermaster, Manila, P. I.; Helen Ross Hosmer, Albany Medical College, Albany, N. Y.? — JAMES W. KIDDER, *Secretary*, Room 505, 261 Franklin Street, Boston, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills, Mass.

### 1907

Once again we have to record the death of one of our classmates. Franklin Ripley died in Troy, N. H., on January 14, 1932, after a brief illness. Your Secretary wrote a letter of sympathy, in behalf of the Class, to Mrs. Ripley. Franklin was President of the Troy Blanket Mills, having been connected with this company ever since 1907. We shall try to have more information regarding his passing and his activities during his life in the next issue of *The Review*.

Edward H. Marsh, XI, has written saying that his address is 18 North Lexington Avenue, White Plains, N. Y. His letterhead indicates that he is a deputy commissioner for the Department of Health of Westchester County, N. Y. Ed graduated from Cornell in 1909 with the degree of M.D. and from then until 1917 engaged in private medical practice. In 1917 he became connected with the New York State Department of Health as sanitary supervisor and continued there as consultant in venereal diseases and as Secretary until 1927. He is associate professor in the Long Island Hospital Medical College and also lecturer in Hygiene in New York University. He was married in 1925 and has a son, Edward Harvey Marsh, 2d, born February 3, 1927.

The following characteristic note has come from John Frank: "Have announcement of the Twenty-Fifth Reunion to take place June 17 and am pleased to see it. Naturally, you can count on me, barring act of God and high water, and I am sure that the same applies to Sam Marx and, I hope, to Stud Leavell."

"Had an interesting meeting the other night with an old classmate of ours, Earl Reed, whom you will doubtless remember. Earl is a prominent Chicago architect and instructor of architecture at the Art Institute. It happened that he, Sam, and I all met at the same table at a club dinner."

Our choice of place and date for our Twenty-Fifth Reunion — Oyster Harbors Club, Osterville, Mass., June 17-19, 1932 — seems to have met with approval in many quarters. We met Gene Potter on the street in Boston not long ago, and he said that he has been at the club and that it is a delightful place. He plans to be on hand next June. — Winslow Robinson told us that he had a letter from Charlie Coffin in New York, and Charlie says he hopes to attend.

Tuck Noyes writes from Augusta, Maine, that he hopes to be present. This is great. No one of these three men had ever attended one of our reunions, we believe. We hope that many other fellows who have been obliged to stay away from previous class gatherings will join us next June. Then, with the usual crowd who wouldn't miss a reunion, what a bunch we'll have! Won't you men who read this write your Secretary stating whether you hope to attend. John Frank makes the helpful suggestion that it will interest the class members to know from time to time what fellows they may expect to meet in Osterville in June, 1932. If we may copy the Class of '11 Secretary, "write to Nick." — BRYANT NICHOLAS, *Secretary*, 19 Rowe Street, Auburndale, Mass. HAROLD S. WONSON, *Assistant Secretary*, Commonwealth Shoe and Leather Company, Whitman, Mass.

### 1908

It is with great regret that we report the death of Miss Mabel Keyes Babcock on December 3, 1931. Miss Babcock was one of New England's best known landscape architects, and among her best-known accomplishments are the President's garden at Technology, the planting around Arlington Street Church, portions of the grounds at Wellesley and Bates Colleges, as well as many private estates. — News has also been received of the death of Walter J. E. Barcus, who died in Detroit last September.

George S. Coleman has recently been made district engineer of the sewer service of the Public Works Department of the City of Boston. — The San Antonio section of the American Institute of Electrical Engineers was addressed recently by Harold Smith Osborne, transmission engineer of the American Telephone and Telegraph Company, in connection with an exposition of international telephone service held there.

We note that we have omitted to report the death of Waldo C. York, who passed away last July. We quote a letter received from Frances Oliver York: "In behalf of the family of Waldo C. York, I wish to thank the members of this class for the spray of beautiful roses. This expression of your sympathy was deeply appreciated."

It is also with regret that we announce the death of Winthrop D. Ford on January 27. He served in the navy during the World War, rising to the rank of lieutenant. He leaves his widow and a daughter.

Louis S. Gordon is now located at Room 2202, 245 Fifth Avenue, New York City.



1908 Continued

The second get-together dinner of the 1931-32 season was held Tuesday evening, February 9, at Walker Memorial. Those present were: Beede, Coffin, Hatch, Mayo, Skillings, Heath, Booth, Wells, Carter. As this was our Annual Meeting, Linc Mayo submitted our Treasurer's report which showed the class to be solvent, with a small balance to our credit. I hope our "funds" can be increased materially, for next year we celebrate our Twenty-Fifth, which will make unusual demands on our treasury. Mayo's "dues letter" goes out before long, so please remit promptly and plentifully.

Anyone know the correct address of the following from whom mail has been returned: John T. Tobin, 43 East Newton St., Boston, Mass.? — HAROLD L. CARTER, *Secretary*, 185 Franklin Street, Boston, Mass.

### 1909

William Gilman has returned to the U. S. A. after about five years' residence in Canton, China, where he was associated with the Kwang Tung Electric Supply Co., Ltd. Your Secretary was pleased to have him call at the office as he went through Boston a few days ago. Gilman's personal comments on the present situation in China were particularly interesting.

"Mollie" Scharff expects to make his headquarters in New York City after the middle of February. His new address will be care of Main & Company, One Wall Street. "Mollie" reports that he is very busy, and that the prospects for 1932 are very encouraging. — Edward L. Ryerson, Jr., is Chairman of the Illinois Governor's Commission on Unemployment.

Joe Parker was engaged as Consulting Engineer for the new underpass recently constructed at the junction of Charles River Road and Massachusetts Avenue, Cambridge, Mass., by the Metropolitan District Commission. A number of new features were embodied in the design of this structure, which has received much favorable comment since its dedication the first of January.

Paul Wiswall writes from New York: "We had a tableful of 1909's at the Tech Club dinner at the Waldorf on the 19th. Some of the regulars were unavoidably away, but, as usual, we had a showing that compared most favorably with that of any Class of our age. Around the table were Harry Whitaker, George Bowers, Jim Critchett, Max Weill, Ridsdale Ellis, Frank Loud, Lewis Johnson, Chet Pope, George Southgate, and your local Secretary. Tom Desmond, who is New York State Senator from Newburgh, sent a telegram of regret. — Southgate, who took some of his work with 1910, is with Jim Critchett in the Union Carbon & Carbide Corporation offices. George Bowers was located in Newark till recently, when he went back to his home town, Lowell. — Walter King is now with Ault & Wiborg, makers of printing inks, and is in Cincinnati at present. — Frank Loud has finished his

work as an engineer on the electrification of the Lackawanna Railroad in the Jersey commuting zone. He is now at the New York office of Jackson & Moreland, who were consulting engineers on the Lackawanna job." — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, *Assistant Secretary*, General Foods Corporation, 250 Park Avenue, New York, N. Y. MAURICE R. SCHARFF, *Assistant Secretary*, Main & Company, One Wall Street, New York, N. Y.

### 1910

A good letter from Karl Fernstrom came just too late to appear in last month's issue, so here it is: "I will admit it is some time since I wrote and contributed anything to our class notes. Life has been running along rather quietly from about every angle here at Technology. Two outstanding occurrences — one sad and one most happy — namely in order, Dr. Stratton's sudden death and Dr. Compton's advent as our President have been of more than passing interest over the past 18 months. As for myself, I have heard from Harold Lockett recently who tells me of his marriage. I haven't replied to his fine letter, but will soon as I want to congratulate him on his ability and achievement, although it has been too long deferred.

"Mrs. Fernstrom and son, Tad, eight years old, are wintering and schooling at Sarasota, Fla., on the gulf coast of Florida whence I have just returned today after spending the most interesting and delightful Christmas vacation that it has ever been my good fortune to spend anywhere. All I could ask that would be good for every one of our classmates is that they and their families could spend a winter or more right there.

"Peculiarly, even though right here at M. I. T. all the time, only one classmate has dropped in to see me recently. That one man was Maurice Scott Chapin, who is busy distributing Philippine mahogany out of Providence for the A. C. Dutton Lumber Company. He tells me his naval architectural training here is helping him no end. One never can tell when a long dormant experience jumps into the breach as a great help."

Louis French writes from Milwaukee: "Since 1914, I have been engaged in the practice of patent law and the soliciting of patents and have been endeavoring both in the courts and in the Patent Office to determine for my clients what is and what is not invention.

"In addition, I have acquired a family, comprising a wife and four girls. The oldest will be ready for college next year. My hobby for several years has been experimental work in connection with fuel injection equipment for automotive type oil engines and I hope during the coming year to commercially exploit the results of this work."

The usual grist of clippings about Stuart Chase pours in, but we can keep track of him outside of the '10 notes. — DUDLEY CLAPP, *Secretary*, 40 Water Street, East Cambridge, Mass.

### 1911

Featured by one of Bert Bridges's excellent dinners and followed by the usual enjoyable bowling contests, an enthusiastic group of Eleveners held a midwinter dinner at Walker Memorial in late January. In addition to the usual interesting talk-around after dinner, those present had an extra treat in seeing the first showing of movies by Richmond, Stewart, and Whitcomb of our Twentieth Reunion at Dennie's Douglas Inn last June. Your scribe, being in Boston for the January Alumni Council meeting, stayed over for this dinner on the succeeding evening and others present were: E. J. Batty, II; Obie Clark, II; Lester Cushman, IV; Jack Herlihy, II; Carl Richmond, I; Norman Wade, II; and A. O. Wilson, I.

Max Kushlan, VI, has written a reference book for electricians actively engaged in installing and maintaining electrical equipment in residential, commercial, and industrial buildings and outdoors. The publishers, McGraw-Hill Book Co., Inc., New York, seem most enthusiastic about the new publication entitled, "Handbook of Industrial Electricity," and the writer was pleased to receive and read with decided interest a copy received with the compliments of the author and publishers. May your sales exceed your fondest expectations, Max!

Unemployment is still with us as these notes are written, although by publication time things should and undoubtedly will be better, thanks to the Hoover Credit Corporation. All of which is by way of introduction to a news item informing us that on January 18, Harold Davis, I, associated with the Nashua Gummed and Coated Paper Company, Nashua, N. H., addressed the Men's Club of the Methodist Episcopal Church in Amesbury, Mass., on the subject: "What Can the Church Do to Cure Unemployment?"

Have you heard Rangertone? If not, tune in on Station WOR, Newark, N. J., Saturday afternoons at 3:30 and hear the marvelous Electric Organ (pipeless) finally perfected by Dick Ranger, VIII. These broadcasts started right after New Year's, and it sure was great to hear Dick explain the apparatus and then play and demonstrate how the tones are built up. Since mid-January guest organists have appeared each Saturday with Dick. Durn clever, these Hoosiers!

Old Eagle-Eye, Ros Davis, Secretary of '05, called attention to a silly, but careless, mistake in our January class notes. There your scribe credited some advanced mathematical work, which attracted the attention of the Associated Press Science Editor, to an '11 man when a brother, 1910, was the hero. Richard Chace Tolman '10 was the wizard; Edward Chace Tolman is our classmate. Both are college professors in California, Richard at California Tech in Pasadena and Edward at the University of California in Berkeley. Pardon, please, brothers Tolman, for the mistake!



## 1911 Continued

A nice letter from Bill Warner, I, shows enthusiasm for an improved year for the oil business out there in Oklahoma! Bill's oldest boy is planning to enter the University of Missouri next fall, being now at school in Shattuck, Minn., where he is captain of the track team and has several school records to his credit. His second boy is a fine scholar and very talented on the piano, Bill says, and he and his wife hope this son will go to M. I. T. After a tirade against Governor Bill Murray, Bill ends by saying "there are disadvantages as well as advantages in living in a new state like Oklahoma."

It was the writer's privilege and pleasure in looking out for President Compton and Charlie Locke, Alumni Secretary, during their visit to the Technology Club of Western Maine in Portland in mid-January. Dr. Compton gave a fine talk on "Engineering and Science vs. Economic Depression" and one feature of the evening was the showing of 53 lantern slides of Tech notables "then and now," your scribe guessing 48 correctly. — Charlie Locke, ever watchful of items concerning Technology men, advises us that Ivory James, III, who for some time has been employed in Russia by Ogleby, Norton and Company as an ore concentrating engineer, is now back home in Denver.

Charlie Barker, VI, sends greetings from Los Angeles and says he manages to keep the door open out there "and the wolf hasn't come too close — afraid he will be made into soup!" He adds: "I suppose that by now you have the sawdust box around the stove and have laid in a plentiful supply of eating tobacco." Now it's time to start cutting ice up here, so just three little words in conclusion: Write to Dannie! — ORVILLE B. DENISON, *Secretary*, Douglas Inn, Douglas Hill, Maine. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

## 1912

On the first of January a questionnaire was mailed to all classmates requesting their views on the proposed Twenty-Year Reunion. The response has surprised us all, and has encouraged us to look forward with high hopes for a big success. We aren't going to fill these columns at this time with Reunion details and propaganda. That will come to you through other channels. But lots of news has come in with the returned questionnaires.

Joe Champagne, III, writes that he motored to California last summer with his wife and two children. For 22 years, Joe has been running a successful dancing school in Boston, and has recently taken over the entire building at 454 Stuart Street. Evidently this "depression" thing we hear about has by-passed the dancing business, and we hereby tender our congratulations to this classmate.

Earl E. Ferry, VI, writes from Pittsfield that he is getting a little fatter, but can still find plenty of hair to brush. — A word from John Hall, XI, Freehold,

N. J., states that he is still associated with the American Public Health Association.

Walter P. Green, I, 15 Plank Road, Waterbury, Conn., briefs his history about as follows, "... have not traveled much since leaving Tech. ... Three years with the Engineering Department of the American Brass Company ... six years with Scovill Mfg. Co. and, since 1923, back with American Brass Company. ... Was married in 1913 and have two boys ... one of them, Walter, Jr., now a freshman at M. I. T. and planning to take Course X ... *hope to see you all at the Reunion.*" (Editor's Note. — Same to you Walter, we'll be there.)

Nicholas T. McNeil, I, is an instructor in the Salem High School and Supervisor of Salem Evening Schools. He got that way after ten years of railroad construction and other engineering work. (Editor's Note. Same here, Mac! We tried Civil Engineering for a while, too, and now look at us.) McNeil's address is 104 Linden St., Salem, Mass.

"The Greenleaf Construction Company," writes Harold (Tod) Greenleaf, I, "has had its share of work up to the middle of 1931, so we cannot complain. A card from Henry Babcock recently announced the arrival of the fifth daughter. Bab better call it a day, apparently no sons in the deck."

We got the following scrap of news about Arch Eicher indirectly, but from sources we believe to be entirely trustworthy. A. M. Eicher, XI, was married just before Christmas to Agnes Carroll in St. Paul's Church, Cleveland. They will live in Cleveland until April and then go to Buffalo. Arch is Vice-President of the American Construction Company of Cleveland.

What is said to be the first porcelain enameled home in this country is being designed in the offices of C. B. Rowley, II, Cleveland. He writes us that it is of the Georgian Cottage type, with steel studs and floors, four inches of mineral wool insulation, stainless steel windows, and lots of other novel features which Rowley will tell us more about if we get him away from the job long enough to meet us in June.

Harold C. Mabbott, II, Captain U. S. A., is now stationed at Fort Monroe, Va. Here's what he says: "Have not been hit particularly hard by latest depression because I have been more or less depressed from a financial standpoint ever since leaving school. I am expecting further depression if Congress reduces all Federal pay as threatened. However, I have no complaints as we are all well and happy. Have been in the service nearly 15 years and like it."

And here's a man whose business has been better every year since 1928, and that goes for 1931, too. W. T. Roberts, I, handling "Acoustex," which he modestly claims to be the world's finest acoustical material, is evidently gloating just a little over the rest of us. And justly so! We take our hats off to anybody who can show a risingsales curve this past year.

Harold Danser, VI, 300 Gramatan Ave., Mt. Vernon, N. Y., is building an organization in New York for the sale of a Thrift Plan of investment. He has recently completed a year's contract on the same kind of endeavor for the Canadian Financial Founders, Ltd., Montreal.

Paul M. Tyler, III, is still with the U. S. Bureau of Mines in Washington, and hopes to make the Reunion. He reports occasional contacts with Jim Morley, III, and Walter Triplett, III.

A. F. Allen, XI, is now with the N. Y. State Department of Health as Assistant Sanitarian in the Western District covering water and sewage plants throughout seven counties. His office is in Buffalo, N. Y.

At the Alumni Banquet in New York, January 19, the class of 1912 had the following representation: Mr. and Mrs. Page Golsan, VI; Mr. and Mrs. Charles A. Cary, I; R. J. Wiseman, VI; Walter F. O'Brien, II; Professor E. H. Schell, II; and Commander Jerome C. Hunsaker, XIII-A. The group enjoyed the demonstration of the Rangertone, Dick Ranger's new electronic organ invention, but we understand that the atom-smashing demonstration which was planned to thrill them failed to do business.

Jonathan A. Noyes, II, was in New York on a business trip a few weeks ago, and bought your Assistant Secretary a much-appreciated lunch. We tried to do the same for him in Chicago the other day, but John was out of town so that's another 35 cents we've saved. Anyhow, he looks fine, is doing well, and is hoping to see you all at the Reunion next June.

It is with deep regret that we learn of the death of Fred S. Dodson, VII, who passed away on October 31, 1931. Dodson was a special agent of the State Mutual Life Assurance Company. — FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York, N. Y.

## 1913

Anyone know the correct addresses of the following from whom mail has been returned: William V. Kemp, 40 W. 40th Street, New York City; Maurice E. Levym, 43 Tremont Street, Boston, Mass.; Edwin D. Pratt, 283 Glen Avenue, Port Chester, N. Y.? — GEORGE P. CAPEN, *Secretary*, 50 Beaumont Street, Canton, Mass. ARTHUR L. TOWNSEND, *Assistant Secretary*, Room 3-435, M. I. T., Cambridge, Mass.

## 1914

Keeping up the custom established nearly 15 years ago, the Boston group held a luncheon on January 6. No subject was brought up for formal discussion, but many interesting phases of the industrial situation were talked over. Although we had an attendance of nine, we missed four regular members of this group. Both Fales and Wilkins were confined to their homes with the grippe. Fales promptly recovered, but Wilkins has had a very hard time of it, the grippe

1914 Continued

going into a bad case of pneumonia. Just before the luncheon Crocker had a business engagement, and in view of the small number of customers appearing on the horizon felt that it was necessary to place business above pleasure. Frank Ahern has moved to Washington, which will make him permanently absent. Incidentally, Frank is well established at the Bureau of Standards there and is looking forward to seeing any '14 men who may be in Washington. Those attending the luncheon were Corney, Atwood, Stump, Blakely, Gazarian, Sherman, Horton, Trufant, and Richmond.

The only item of vital statistics received during the past month came from I. R. Paris, of Washington, D. C. Paris reports the arrival on September 26 of his first child, a daughter, Helene.

The award for distinguished service is this month made to Bob Townend who replied to your Secretary's appeal and wrote a real letter. Bob writes in part as follows:

"From 1925 to 1928 I was Professor of Chemistry in the University of Delaware and received my Ph.D. degree from Johns Hopkins University in 1927. While teaching proved itself an interesting line and with many delightful features, industrial work is more lucrative and I resigned to become Chemical Director of the Pilot Laboratories, Inc., of Arlington, N. J.

"Early in 1930 I had a chance to join the staff of the Calco Chemical Company of Bound Brook, N. J. This company is a part of the American Cyanamid group and at that time, they had plans for reorganizing their research organization. However, the continued depression caused an abandonment of these ideas and a curtailment, which left me out of a job last summer.

"But fortunately I made another connection soon which led me into a new line. At present I am located with the Georgia Rosin Products Company, at Savannah, Ga., though my family is still in Arlington, N. J., where we own our home. Savannah is an attractive city and, so far, the climate has been quite delightful and far different from the penetrating raw cold of Boston. My work relates to naval stores, more particularly to rosin and its products.

"A couple of weeks ago, another fellow and I took a week-end auto trip through a part of Florida, some 840 miles in three days. But it was worth it. We got about halfway down the state. Oranges were selling for four cents a dozen and grapefruit for slightly more. In fact in Georgia, the paper shell pecans, which have brought from 50 to 60 cents a pound in years past, can be bought eight pounds for a dollar."

Pat Adams' many friends will be interested in learning that he and Mrs. Adams are spending the winter in the hills of Vermont. Porter has a beautiful estate where he has formerly been spending his summers, but in order to regain his health, he is staying there through the winter. It has been Pat's aim for some time to be able to be in Vermont during the winter, and he has at last succeeded in bringing this about.

The returns from the appeal for contributions to the Athletic Fund, so ably administered by Dr. Rowe, have not been as numerous as we hoped for. We used to ask for five dollars, but even one dollar looks large now. The contribution list is still open, and if you can spare a dollar for a worthy cause, please send it along to your Secretary, who will see that it is promptly forwarded to Dr. Rowe. — HAROLD B. RICHMOND, *Secretary*, 30 Swan Road, Winchester, Mass. GEORGE K. PERLEY, *Assistant Secretary*, 21 Vista Way, Port Washington, Long Island, N. Y.

## 1915

Here are more of those interesting letters that came with the recent class dues. While they last, they make good monthly copy, but when they are exhausted, you fellows must support our column with some news of yourselves.

Greville Haslam, IV, as headmaster of the Episcopal Academy, Overbrook, Pa., writes: "Your suggestion that I forward two dollars class dues is a good one, herewith proof of acceptance. As for news, my latest is nearly two years old and a boy. Technology spirit had nothing to do with my marrying the daughter of Elisha Lee '92 at the time when he was President of the Alumni. We live on the campus of the Episcopal Academy and number among our close friends and neighbors, Arthur (Buck) Dorrance '14, who was an Academy boy, too, and whose son is here. The head of our Science Department is Lewis Tabor '22, who is doing a whale of a good job, and it's his boss who says so. We have a school of just 600 — all boys — and occasionally send a good one to the Institute. There are three seniors going to M. I. T. this year."

Visions of unrestrained good times at our next reunion come with H. B. Pickering's, I, letter from Cutler's Sea View House, Hampton Beach, N. H. Pick has wandered far from the fields of engineering, but we hope he achieves success in this new business. "Sorry I'm late. I've been busy. Have just bought this place which is the oldest established hotel at Hampton Beach. On its registers (6 ft. 6 in. piled flat) I have found Gov. Towle, Gov. Fuller, Daniel Webster, Henry Longfellow, James G. Blaine, Jr., Miss America, Henry A. Shute. I haven't had a chance to look the registers over carefully.

"We are the only steam-heated hotel and shall keep open to the end of the year. The hunting (birds) here is excellent. This fall we are running week-end dinner dances and game dinners. I expect to bid for the next '15 reunion or class dinner — wives, kids, and all."

Reg Pollard has joined several of our other classmates with Brown Company at Berlin, N. H. Glad to hear of your new job, Reg. "I was sorry to miss our Fifteenth Reunion, but couldn't make it as I was switching positions at that time. I am now located with the Brown Company at Berlin, after three years with the Fiberloid Corporation at Indian Orchard. Doug McMurtric, Al Hall, and Don White are up here also, which helped

considerably in coming to a new location. It is quite a change to the White Mountains of New Hampshire from the city of Springfield, but we are enjoying it, especially the out-of-doors and winter sports.

"I have acquired a family of three since I saw you at the Tenth Reunion — two sons and a daughter; possible material for future Technology men if they have the brains and the old man has the necessary funds to meet the tuition which is mounting steadily since we attended. Haven't seen any other classmates except the above mentioned, although I stopped to see Ted Spear at Rumford several times this summer, but he was always out."

Harold Colby, II, writes the following from the Mason Regulator Company, East Milton, Mass.: "Better late than never. Please find enclosed check for two dollars to cover class dues suggested in March. I have no excuses to offer. I might lay it to present conditions and perhaps justly, but it is the old story, 'well, I'll send it tomorrow.'

"I have no news of myself worth mentioning. I keep busy at my daily task in spite of the lack of business. Our business has kept pace with the times, but has been fortunate enough to obtain its share of the business that there has been. Remember me to the boys you see and write to. I was sorry to miss the last dinner, but, as I told George Rooney, I'll try to be at the next one."

F. A. W. Davis has our best wishes for success in his new position with The Simplicity System Company, Chattanooga, Tenn. He writes: "An opening developed with the above concern not very long after the receipt of your letter. It is very near home and was very fortunate for me. I have an engineering position of sales, service, and erection. I note that the old gang of Murderer's Row at Engineering Summer Camp are still sticking together. George Rooney, Frank Scully — they know who the rest were and I have good reason to remember, too. Remember me to any of the Course I fellows you run into."

We hope to have a New York City Class Dinner in February which will make good news for the April Review. — AZEL W. MACK, *Secretary*, 379 Marlboro Street, Boston, Mass.

## 1916

It was a great pleasure to me to receive another cheerful letter from Herbert Gfroerer from Russelsheim, Germany. He says that there isn't such a thing as business over there and that it looks now as though he would be back in the states again fairly soon. His one encouraging note is that his game of golf is improving. I wish that more of our classmates would take up the game.

I note that Chuck Loomis has apparently left Detroit and is now with a branch of the Bemis Brothers Bag Company at Memphis, Tenn. I don't know whether this is temporary or permanent. I suppose everybody feels that they must devote their entire energy to earning a living these days, but I would certainly



1916 Continued

appreciate it if some of the brothers would take the time to send me a few class notes. Believe me, the picking has been extremely difficult these past few months.

Here is a suggestion! Take up golf and forget your worries. — HENRY B. SHEPARD, *Secretary*, 269 Highland Street, West Newton, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, 7338 Woodward Avenue, Detroit, Mich.

### 1917

These notes have been confined to facts rather than rumors in the past. There now comes such a startling rumor that resistance is quite overcome. Gossip has it that James W. Doon, he of Henniker, he of the many accomplishments, is now a full-fledged judge and on the Circuit Court at that. His rise to judgeship is so fitting and proper that we are accepting the rumor as true subject to a disclaimer from the aforesaid part of the many parts.

Leon McGrady with his usual efficiency, has combined advertising with Christmas custom and correspondence. We have seen a Christmas card sent out in Mac's handwriting on the new Kodapak being brought out by Eastman Kodak Company.

If we have not previously mentioned it, there is to be a reunion of the class of 1917 at the Corinthian Yacht Club in Marblehead, Mass., in June. — RAYMOND STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

### 1918

Shorty Carr reports that he has been in New York with the International Paper and Power Company since the first of October. Rumor has it that Don Burton is planning to retire after a couple more sales like the policy he just sold Shorty. Anyway, as a result of those premiums, Shorty lives in Tudor City—144 East 36th Street to be exact—and walks to work.

Our Gretchen has been endeavoring to check up on Einstein. You know that theory that if one could travel faster than the speed of light, time would move backward. Well, anyway, to make a short story long, she drove her old Chevrolet (Class of 1929) from Rowayton to Milton, 205 miles, in 4¾ hours. (Connecticut has no speed limit, but the Massachusetts Registrar of Motor Vehicles, who is sworn to uphold the law declaring 30 miles per hour as the top limit, will please close one eye while reading this.) And after that performance, Gretchen sold the old wagon in exchange for one with new Duco on it that won't percolate over 20 miles per hour for the first 500 miles. Isn't that just like a woman!

Professor Richard Smith — Dr. Smith to those who want to keep on the right side of him — delivered an arts and science lecture on airships, his jaunt over Switzerland in the *Graf Zeppelin* this summer, and the ride in the *Akron*. He went to Lakeport during Christmas vacation and waited and waited and waited for added humor and interest as well as that so-much-to-be-decided professional ponderosity to his lecture.

Professor Norton is back from Europe and promises a good account of himself for this column 'ere long. — We had a Christmas card from James A. Flint, but only that from Course II's smart boy of 1918. — F. ALEXANDER MAGOUN, *Secretary*, Room 1-305, M. I. T., Cambridge, Mass. GRETCHEN PALMER, *Assistant Secretary*, The Thomas School, Wilson Road, Rowayton, Conn.

### 1919

Anyone know the correct addresses of the following from whom mail has been returned: Brainard C. Burnham, 32 Stearns Avenue, Medford, Mass.; Capt. Edmund W. Hill, Command & General Staff School, Ft. Leavenworth, Kans.? — WILFRED O. LANGILLE, *Secretary*, 7 Willow Street, Cranford, N. J.

### 1921

Together with appropriate holiday greetings from Mr. and Mrs. Jackson W. Kendall and Jack, Jr., comes the announcement of the arrival on December 29, 1931, of Master Robert McCutcheon Kendall, weight 8 pounds, 2 ounces. Our congratulations and best wishes to everybody at 1295 Elizabeth Street, Pasadena, California. Jack, *père*, as evidenced by the attractive silhouette group on the announcement, is still the same old Jack of years gone by unless, perhaps, in common with most of us, there has been some increase in avoirdupois and also a decrease in the barber's duties in trimming the hair on top!

Another announcement of interest is that of the arrival of Miss Norma Jean to Mr. and Mrs. Willard G. Loesch on January 8, 1932. Again congratulations and best wishes. Bill is superintendent of the Forbes Varnish Company, 3800 West 143rd Street, Cleveland, Ohio.

The January, 1932, issue of *Electrical Engineering* contains an abstract of a paper entitled "Application of the Coöperative Method of Instruction to Engineering Schools and Polytechnic Institutes" by D. C. Jackson, Jr., Fellow of the American Institute of Electrical Engineers and Head of the Department of Electrical Engineering of the University of Kansas. In part the abstract says: "Although the coöperative method of instruction is assured a permanent place in engineering education, coöperative courses in general still are considered to be in an experimental state of development. In (the) current . . . paper . . . some well-known factors controlling the establishment of this plan of education are reviewed as are some of the general methods of applying it to various types of institutions. While the author states that 'no exact conclusions can be drawn concerning the general principles governing the installation of the coöperative method,' he expresses the belief that it is not *universally* applicable to engineering schools and polytechnic institutes; nor is there any one *best* method of using it."

Ray reports receiving a Christmas card from Stuart Nixon, 744 Beacon Avenue, Los Angeles, Calif., with nothing further in the way of news, — typically Stuiel

At last reports he was still a bachelor and still working for Continental Motors. Also reported are Christmas cards from Paul, Alice, and Nancy Rutherford and from Richmond, Marie Louise and Sandy Clark. Paul is supervisor of fractional horsepower motor design with the Delco Products Corporation, Dayton, Ohio. Rich assistant to the manager of the refining department, Humble Oil and Refining Company, Houston, Texas.

Please help the employment situation, — send some news to Ray and your Asec or we will both be out of jobs! — RAYMOND A. ST. LAURENT, *Secretary*, Rogers Paper Manufacturing Company, South Manchester, Conn. CAROLE A. CLARKE, *Assistant Secretary*, Bell Telephone Laboratories, Inc., 463 West Street, New York, N. Y.

### 1922

Important please note stop Plans for Reunion progressing smoothly stop Messrs. Horn, Hodgins, Davis, and Rundlett having conceived idea of Depression Reunion upon advice of members of the Class consulted stop Will cut all costs to the very bone stop Place Long Island Shore of Connecticut stop Date middle of June stop Cost low enough so that every man of the Class can attend stop Additional information soon.

Anyone know the correct addresses of the following from whom mail has been returned: Herbert D. Allee, 136 Sunset Avenue, Sandwich, Ont., Canada; Milton O. Carlson, c/o Navy Dept., Washington, D. C.; En Lang Chao, 933 Te Yu Li, East Yuheng Road, Hunkow, Shanghai, China; Charles W. DeVito, Reginald Denny Productions, Universal City, Calif.; Joseph Fine, 47 Hancock St., Boston, Mass.; Harold B. Frost, Campello, Mass.; Philip J. Gelt, Leyto Vidal, Mayori, Oriente, Cuba; Mineo Hiragi, 20 Nishiyagua Cho, Minamiku, Osaka, Japan; Charles T. McGrady, c/o Arthur G. McKee Co., 2422 Euclid Avenue, Cleveland, Ohio; Aaron Radin, 315 Broadway, South Boston, Mass.; Archibald F. Robertson, 22 Edith Street, Everett, Mass.; Abraham G. Silverman, 231 Brightwater Court, Brooklyn, N. Y.; Frederick W. Wiegand, 2000 W. Summit Avenue, San Antonio, Texas; Edward J. Ziock, Manville, R. I.? — RAYMOND C. RUNDLETT, *Secretary*, The Curtis Publishing Company, Lincoln Building, 42nd Street, New York, N. Y.

### 1923

The practice your secretary has instituted of asking any member for whom he receives a change of address to account for it has made possible the inclusion of several interesting items of recent months. This month we have a report from Miles Pennybacker VI-A, President of Voltarc Tubes, Inc., of 604 Central Avenue, East Orange, N. J., as follows: —

"I hold the questionable distinction of being President of what is probably the world's smallest corporation. We have been doing laboratory and engineering work for the neon sign trade, and are now setting up licensees to handle a new type



1923 Continued

neon tube system. The shop is here in East Orange and we have recently taken a house in near-by West Orange, which makes a very happy combination of easy commuting and business proximity to New York.

"There are quite a few '23 men around here. Cecil Green, VI-A, is the latest arrival. He has just located in Newark, in charge of the tube engineering and production for the International Telephone and Telegraph Company. He says this is not just another stop-over on his annual pilgrimage to California, but he still has that far-away gleam in his eye when the West Coast is mentioned. — Bob Henderson VI-A, has just become the proud father of a bouncing baby girl. He is still handling the radio station hook-ups for A.T. & T. and living here in East Orange.

"I do not believe I mentioned that our home has been brightened, blessed, and made into a continuous three-ring circus by the addition of three youngsters, Anne, Bruce and Claire. Very handsome children, indeed. At least, people say they look like their father."

Mr. and Mrs. Basil Ogden Stewart, V, announce the arrival on December 27 of a son, Robert Ogden, at Laurel, Miss.

Dr. Per K. Frolich, X, of the research staff of the Standard Oil Development Company, has been getting into the news again, this time in the *Philadelphia Public Ledger* which reports a paper he has prepared for presentation to the American Chemical Society. The paper in question discusses synthetic chemistry in general, warning that synthetic methods mean duplication of production and overproduction so far as the world is concerned, but predicting that such processes are likely to continue to be developed because of the struggle among nations for industrial independence and the striving of industry to rid itself of restrictions imposed by geographical location of supplies of raw materials.

New addresses reported show that Ernest E. Fairbanks is with Pictorial Science Service in New York City; that Leo S. Hayes, XII, is at the Cerro-de-Pasco Mine in Peru, South America; and Rally Rubins, I, is with Hewitt and Brown Company in Minneapolis. Other address changes which appear to have some significance include those of Frank J. Salus, VI, from Cambridge, Mass., to Cleveland Heights, Ohio; Leonard E. Carlsmith, X-A, from Terre Haute, Ind., to New York City; and Willoughby D. Gundry, XV, from Brownsville, Texas, back to Cleveland, Ohio.

Anyone know the correct addresses of the following from whom mail has been returned: Elliott A. Adams, c/o Cie Massey Harris, 148 Boulevard de la Villette, Paris, France; Malcolm L. Carey, Box 1881, Arvida, P. Q.; Leo V. Gorian-sky, 10 Mitchell Place, New York City; DeWitt C. T. Grubbs, Headquarters 7th Corps Area, Army Building, Omaha, Neb.; Salvatore A. Guerrieri, M. I. T. Station, Bayonne, N. J.; Eugene B. Mechling, 22 Rutgers Place, Scarsdale, N. Y.; Hao J. Wu, 3 Hsi Ching Tao, West City, Peiping, China? — HORATIO L.

BOND, Secretary, 31 Concord Avenue, Cambridge, Mass. JAMES A. PENNY-PACKER, Assistant Secretary, Room 661, 11 Broadway, New York, N. Y.

## COURSE VII

The following notes were contributed by B. E. Proctor:

Because of the conspicuous absence of news about Course VII men, I am volunteering such gossip as has come to my ears in recent months. I suspect that one reason our genial Course Secretary, Stubby Griswold, has not published the latest news is because of his inherent modesty, as the most important news concerns him. Quite recently Stubby was presented with a fine young son, Peter by name, whom we hope will be a member of the Class of 1953. Letters arrive here at rare intervals from the fond daddy who generally writes from Montreal while attending the interests of Zonite, Ltd., there. His home address is c/o Zonite at the Chrysler Building, New York City, most of the time, however.

Phil Riley has recently moved to Rocky River, Ohio, although his duties are still those of Director of Health Education in the City of Cleveland Schools. The additional duties incident to feeding some 10,000 children out of his little family of 150,000 have kept him on the jump this fall. Phil and the Mrs. dropped in last summer after one of their Marathon drives from Cleveland to New York City to Boston in something like 40 hours, just as wide awake as though they were out for a Sunday afternoon drive instead of a couple of nights on the road.

Last September we saw Nelson Fuller at the American Public Health Meetings at Montreal. I had the pleasure of his company on a trip to McGill and later on a trip up the mountain. Unfortunately the time was not available for a trial of his most recent bridge system which we will have to try next year at our Tenth Anniversary. Nelson (I have found he doesn't really like Smoke for a name) also has two daughters now in his very special house in Olean, N. Y., which is insulated and heated by an original method. I saw this house in 1930 and believe that he has published a description of it since in one of the heat engineering journals.

Christmas brought a card from Milton Parker with a postmark Danville, Ill., although his headquarters are still in Baltimore with the National Dairies. Professor Prescott saw him there at the S. A. B. meetings the first of the year. — Phil Bates '24, VII, of the Frigidaire Corporation was also at the meetings with the news of a second offspring which arrived in December. Al Ellsworth sent a card recently from Grand Central Station, although reports filter through that he is anywhere from Louisville to Dallas and New Orleans for the Titman Egg Company.

Stubby Griswold says he sees Herman Swett on rare occasions as he is now in New York. We would like to have news of Herm and a call if he ever gets to Boston. — Our classmate, Miss Elizabeth Nickerson, is now Chief of the Bureau of

Public Health Instruction, Connecticut State Board of Health, Hartford. — Ned Holmes '25 received his M.D. from Harvard last year along with Egon Kattwinkel, XV, and Ned started January first as house officer at the Massachusetts Eye and Ear Infirmary, a much coveted post.

Don Lovell, VIII, well known to many of us, passed away late last summer at Mount Macgregor, N. Y., after a long and sad battle with T. B.

Fred Almquist, XI, has been with the Connecticut Board of Health as sanitary engineer for the past two years. — Charlie Roll, X, is said to be living in Jersey and was not particularly busy according to Stubby last fall. — I saw Frosty Harmon in San Francisco a year ago and at that time he looked just the same as he did in 1923, with not a trace of a wrinkle or a gray hair. Since that time he has become Secretary of the Technology Club there so his writings are often seen in *The Review*.

The writer is still at the Institute but has changed his address to Melrose, at which place any VII folks are most welcome. In view of the fact that Melrose is out in the sticks to some of our more cosmopolitan classmates, a map has been devised to direct their footsteps which is available on request. I might mention that Alfred Earle Griswold was able to find it even before the map was published and helped us to housewarm on our second night in the new place. — EARLE A. GRISWOLD, Secretary, Zonite Products Company, Chrysler Building, New York, N. Y.

## 1924

Your scribe was somewhat in error in announcing in our last appearance that our worthy President, William H., Jr., was engaged — in error because I told only the small part of the story. He was at the time actually married and had been since September 4 to Miss Ruth Evelyn Dailey. And then after setting up in the business of housekeeping, he was immediately moved to Los Angeles to work in a combined sales and factory capacity, still in the lighting department. His address is now c/o General Electric Company, 5201 Santa Fe Avenue, Los Angeles. On behalf of the Class and on my own behalf, I want to wish Mr. and Mrs. Robinson a long and happy life — only come back home soon!

Douglas Montgomery — address, Western Electric Company of Argentine, Diagonal Norte 615, 8° Piso, Buenos Aires, Argentina — writes in: "I am still here in Buenos Aires for the Western Electric Company of Argentina and my position as supervisor for the B. A. district is unchanged. The diversion (as it seems at times) of keeping nearly 100 talking picture equipments functioning properly in a foreign country and in strange tongues, approaches now the ordinary thing after nearly two years of practice. As a matter of fact, our situation in this regard approaches that in the United States, after making due allowance for factors due to differences in temperament of the theater people here."

1924 Continued

On October 10 in Hopkinton, N. H., Miss Marian Ella Currier and William Earl Messer were married and are now at home on Ridgeway Road, Cheshire, Conn. Messer is chemist with a rubber company in Naugatuck and his wife was a former school teacher in Cheshire. — Another October wedding, on the 8th in Sharon, Mass., was that of Miss Isabel Finkleman and Maurice Holsberg. Both are social workers in Sharon, Holsberg having been President of the Mishkan Telfia Junior Council. To both couples we extend our sincere wishes for every happiness.

From the Boston *Globe* we learn that Capt. Sarkis M. Zartarian has successfully passed the bar examinations in the State of Massachusetts. He went from the Institute to the United States Coast Guard School and was graduated there in 1925. Last year he received his LL.B. degree from Northeastern. He is now an inspector attached to the State Motor Vehicle Registry. His home is at 7 Richard Avenue, Cambridge.

Doubtless many of you have seen considerable news in the press lately respecting the activity of Denton Massey. After leaving the Institute and returning to Toronto, he organized the York Bible Class, meeting on Sunday afternoons, an organization which has grown in six years from a membership of 18 to 2,400, becoming probably the largest Bible Class on the continent. On Sunday afternoons in the new Metropolitan Church, he has an attendance of 2,000 and an estimated radio membership of 250,000. This church incidentally is their fourth home. Denton devotes 24 hours a week to his Bible Class, all men whose average age is 25 years. Recently he was guest speaker of the Y. M. C. A. in Lockport, N. Y. This, however, is not his only occupation as he is superintendent of the Toronto works of Massey-Harris Company, Ltd., a director of the Toronto City Dairy Company, Ltd., and the Broadview Y. M. C. A., a member of the board of governors of the Toronto East General Hospital and the Toronto Board of Trade.

No details are available at this writing of the third annual Dinner Dance which took place on February 6 at the Army and Navy Club in New York, participated in by 1923, 1924, and 1925. Here's hoping Anatole Gruelr or Bill Correale will remember your Secretary and furnish a story of the affair.

And to close, I will give you the meat from a letter of Charlie MacBrayne, III. "I, myself, have little or no news to offer. I spent part of last week in Youngstown. I tried to locate Clarence Chaffee, but was unable to find any trace of him. Donald Kennedy is still in Mexico and so is Al Lindsey. A note from Al at Christmas time announced the arrival of a daughter in the Lindsey household. — Syl Massari is still in Chicago and is quite successful in his position with the Chill Car Wheel Manufacturers Association. I have not seen Syl for quite some time.

There are three other Technology men with our Company: L. E. Wemple '08 is our President, J. R. Daesen '22 is the head

of our research department, and L. S. Gifford '31 is in the research department. You will note that I have moved to Peru, which is the adjoining town to La Salle. My present address is 827 Plain Street, Peru, Ill."

Anyone know the correct addresses of the following from whom mail has been returned: Thomas F. Bundy, 526 Beacon Street, Boston, Mass.; Wentworth Chu, 53 Orphanage Street, East Hills, Canton, China; James H. Doolittle, U. S. A., Mitchell Field, N. Y.; Percy D. Fuller, 81 Billings Street, N. Quincy, Mass.; Julian A. Joffe, 85 Decker Avenue, Port Richmond, N. Y.; Rolf S. Julsrud, 113 Monroe Street, Petersburg, Va.; Samuel Kogan, 124 Prospect Avenue, Dunellen, N. J.; Joaquin M. Mayoral, 357 Ninth Street, Brooklyn, N. Y.; H. Gregory Shea, 120 Park Street, Bronxville, N. Y.; Richard F. Shea, 62 E. Abington Avenue, Chestnut Hill, Philadelphia, Pa.; Robert N. Vincent, Bear Brand Hosiery Co., Kankakee, Ill.? — HAROLD G. DONOVAN, General Secretary, 372 West Preston Street, Hartford, Conn.

## COURSE I

The recent '24 notes have looked so threadbare that I have been prevailed upon to make at least one more attempt to act as the Walter Winchell of the wandering Civils and with much help from George Tapley, who still shares with me the uncertainties of consulting engineering, have the following tidbits of news to offer.

Last May Harold Banks announced that, after two years and seven months of hard labor (including one half-day off for the purpose of getting married) on the Cleveland Medical Center, he was going to take a vacation. As you may remember, he has been assistant superintendent for Coolidge, Shipley, Bullfinch, and Abbott (hospital architects) of Boston. His long-awaited vacation lasted him just two weeks, after which time he was hurriedly called to assume a similar position on the New York Medical Center with the same firm of architects. This is a \$27,000,000 job and should add greatly to the valuable experience which Banks has already had. Here's hoping it also lines his pockets with much gold to defray the cost of future fur coats for Miss Barbara Banks, who is now all of two years old. Banks mentions that Mal McNaught, VI, New York manager for Hixon Electrical Company, is also doing some work at the same job.

A New Year letter from Theron Bailey to Tapley informs us that his work with the United States Engineer Office brings him to Louisville. He has been working out of the Louisville office on the construction and maintenance of Ohio River navigation dams, chiefly in the vicinity of Paducah, Ky., for over six years. Richard Theron Bailey, born June 15, is now a strapping lad of 19 pounds and ready to walk if his fond parents would only let him.

A recent change of address notice from headquarters indicates that Russ Ambach has moved his family to Evanston, Ill. I

heard indirectly that Russ is connected with the design work for a large office building being constructed in Chicago by the Marshall Field estate. Is that right, Russ? Young Dwight Russell Ambach has just had his first birthday, so Russ is probably feeling the necessity of ceasing his wanderings.

Don Moore was married to Miss Elizabeth MacKenzie in Newton Centre on October 11, 1930. Latest reports are to the effect that Don has left the New England Power Company and is now in the insurance business. — Sam Shulits, who usually keeps Tapley or myself informed of his whereabouts, has been silent for some time. When last heard from he was in Brno, Czechoslovakia, where he was engaged in translating into English a treatise on hydraulics and water power engineering. I hope Sam will entertain us with a full account of his travels upon his return home.

A card from Ed Winiger postmarked Highland Villa, West Pembroke, Bermuda, reads as follows: "I am here for the winter with my family, building a reinforced concrete stadium. The weather is ideal for our little red-head (she is 18-months old now) and we are quite fond of the place. The labor problem, however, is one continuous headache." Yes, Ed, and shoveling coal all winter is one continuous headache, too!

Ed Shiery is still in Istanbul, Turkey, where he is Head of the Civil Engineering Department at Robert College. Barbara Ann was born in Istanbul just a year ago, but her presence has not prevented Ed and his wife from interesting travels through Europe and Egypt.

Curley Fletcher is established in New Kensington, Pa., where for the last year and a half he has been doing some very interesting work for the Aluminum Company in connection with their new series of rolled shapes. Curley acts as trouble-shooter and technical adviser for the various offices and assists them in developing new uses and designs for the company's products.

Your Secretary recently made a trip to New York, and was fortunate in connecting with several Course I men. A phone call to Bill Correale elicited the information that the regular class luncheon was to be held at the Planters the following day, so I made a point of being there and talked over old times with Bill. At an A. S. C. E. meeting that evening, I ran into Walter Gress who is with the Board of Water Supply, and Ran Giles who is with the firm of Malcolm Pirnie. George Barnes '23, who instructed us at summer camp, was also there. In Newark I had lunch with Jim Robbins '23, and had a chance to say hello to Bill LaLonde '23, both of whom also tried to instill knowledge into our craniums at East Machias. They are now the mainstays of the faculty at Newark Technical College.

I also connected with Jack Nevin, who presented me to his very charming wife to whom he has been married for nearly two years. It had been a long time since I had seen Jack, and we had a lot of space to cover in a short time. Those of you who



1924 Continued

read of the concrete "obelisk dam" used for diversion purposes at the Chute à Caron hydro job in Northern Quebec will be interested to know that Jack had charge of the concrete control work.

Now that I have overcome my inertia and have started again, let's have some coöperation and pack this column with news. Write to me at the address below.

— JOHN D. FITCH, *Secretary*, 1132 Munsey Building, Washington, D. C.

## COURSE II

During the past year your Secretary has been able to get only a very small amount of news. This has been done by considerable traveling and standing on the main highway through Syracuse, stopping members of our course who happened by.

I found it necessary to go to Pontiac, Mich., to see Shorty Manning. Shorty spent about an hour with Mrs. Hungerford and myself on September 20. Shorty is doing research for General Motors and lives in Pontiac. Mr. and Mrs. Manning have two children. I have Shorty's promise that he will attend the Ten Year Reunion. — Bob Reid stopped here in Syracuse for a few minutes when going from Buffalo to Boston while on his vacation. Bob is located in Newark, N. J., in the local office of the American Blower Company.

F. B. Stevens was married August 15, 1931, in Akron, Ohio. Steve is with the Firestone Tire and Rubber Company where he has been since graduation. — Nesmith Thompson is married and has a palatial residence in Fitchburg, Mass. It is understood on good authority that Mr. Thompson actually spends some of his valuable time with the Parks-Cramer Company when he is not enjoying vacations at the playgrounds of New England.

It appears that our particular small group of the Alumni Association has become practically extinct. There are, however, occasional sparks to indicate that there is still some life. We all know the great magnitude of the undergraduate spirit that used to be just beneath the surface, only waiting for an occasion to be released, and whenever the occasion arose there was plenty of the necessary spirit and action.

Gentlemen, the occasion is once more here! It is time for a boiler explosion from Course II. The foregoing may be considered as an appeal for notes. — FRED S. HUNGERFORD, *Secretary*, 1804 West Genesee Street, Syracuse, N. Y.

## 1925

Anyone know the correct addresses of the following from whom mail has been returned: Vladimir D. Belsitzman, 32 Sapernaia, Tiflis, Caucasus, Russia; John L. Cahill, 141 W. 41st Street, New York City; Guy C. Canfield, 36 George Street, Bristol, Conn.; John W. Lindsley, Tenn. Products Co., Lyles, Tenn.; Albert M. Prentiss, 405 Alamo Nat'l Bldg., San Antonio, Texas; Kenneth W. Richards, 55 Grove Street, Montclair, N. J.; Feliciano T. Roque, 36 Naval, Malabon Rizal, P. I.; Edward W. Wendell, Pi y Margall 2, Madrid, Spain; Harold D.

Werner, 527 Poplar Street, Erie, Pa.? — HENRY V. CUNNINGHAM, JR., *Secretary*, 43 Chestnut Street, Boston, Mass.

## 1926

A recent communicant to the Alumni Association has criticized your Secretary for his flippancy. This sober-minded gentleman obviously felt that these notes seem beer-begotten, frivolous, and not sufficiently didactic. Your Secretary admits the soft impeachment and places the blame on a congenital incapacity to express "such simple things in such a solemn way."

Don Marquis once remarked that the function of the newspaper columnist is to stroke a platitude until it purrs like an epigram. Your Secretary aspires to no such achievement, but he admits taking a great delight in approaching the work of class-note writing in a Falstaffian mood, stroking a class note until it becomes sibilant with a mild maltiness. Otherwise the simple annals of the poor — such is the condition of all of us now — would overwhelm him with their tragedy and mute the elegies, the epithalamiums, and the vital statistics which constitute the meat of these monthly essays. He, therefore, begs leave to disregard his worthy critic — to write from his cups, so to speak, lubricating his style with malt rather than encrusting it with mold.

And so to business, lest the more frivolous members of the Class be disturbed by this unprecedentedly serious introduction. First, a few results of our supernal winter weather. The engagement of Miss Sally Hodgson of Danbury, Conn., was announced to Charles H. Merritt, 3d, of Bridgeport, Conn., on December 6. — On Saturday, November 21, the marriage of Miss Bernice E. Calix to Neil W. Perdew took place in Hasbrouck Heights, N. J. Mr. Perdew is chief engineer of the Aircraft Corporation of America. — Miss Margaret Stewart was married to Arthur C. Sutton on November 25 in Berkeley, Calif. — Miss Ruth B. Burnham became the bride of Donald C. Chase on December 26, in Medford, Mass.

Late in January your Secretary had the privilege of sitting at a table at the Alumni Council composed entirely of '26 men. They were Eben Haskell, Ted Mangelsdorf, and Robert Morrissey. — Charles Tonry was in the office recently. His home is in Telluride, Colo., a town more pleasant than its name, I am sure. Charles will be remembered as one of those brave souls who coursed about the countryside in cross-country running. He has promised to assume the portfolio of Course III Secretary. — Joe Lewis is still one of the leading fencers in America. It was through his efforts that the Olympic tryouts were brought to the Institute in February. There is little doubt that he will be a member of the Olympic Team, it being recalled that he was the only American in the last Olympics to reach the finals. — J. RHYNE KILLIAN, JR., *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

## COURSE XV

Sh! The secret is out. Harry Howard reports that he who was once so innocent has succumbed to the depths of making his own home brew. However, Harry has not fallen quite so low as to take golf seriously. Anyway he reports his wife could beat — "to defeat, not to sock" — him if he did. Harry reports having been through East Machias on his way to Canada (I'll bet that is where he got the home brew idea) and informs me that once beautiful edifice, the Opera House, has burned.

E. Sterling Pratt reports that he is neither down nor out in spirit or otherwise yet, but there is no telling what he will be if he doesn't get located some time soon, as he is out of a job with nothing in sight at present. Immediately after graduation, he worked for the International Shoe Company for about a year, doing piece-rate and time-study work. He then went into partnership with an uncle in a woodworking and church furniture business, but things have not been so rushing in that line recently so he is looking for another connection. He was married about two and half years ago, to Miss Charlotte L. Brown of Nashua, N. H., and now has a son a little over a year old.

Art Brockelman is neither married, dead, or hibernating, "just busy!!" as he puts it. He is assistant general manager of the Brockelman Bros., Inc., operators of 12 markets and stores throughout New England. He has been in the game ever since graduation and reports that he hopes to stay in it the rest of his life. Art sees R. R. Smith, who is with the Ramsdell Company, and G. Warren Smith every once in a while.

Gus Gostanian isn't worrying very much over the depression, as it has thus far overlooked him. However, he may fall into its meshes yet, he reports. He is with Ed J. Cheney, Consulting Engineer, who is an expert in Public Utility problems. He reports having seen Bill Kelker, who is with some department store in New York, and also Al Bassett.

Bill Lowell, as has previously been reported, was married about a year after graduation and now has two children, a boy and girl, age three and a half and two and a half years, respectively. Bill is still with the Lamp Engineering Department of Hygrade Sylvania Corporation of Salem, Mass. He reports having seen Guy Frisbie in Troy, Ohio, last spring. Guy is still with the sales department of Hobart Manufacturing Company.

Frank Cramton reports that he has been married for about four years now and has a little girl almost three years old with a little brother expected shortly. Frank reports that Ed Haskell is doing a good job with C. H. Tenney and Co. in Boston and that Frank Wilkinson recently celebrated the arrival of a son by going to work with the Multibestos Company. Wilkinson is located in New York City. Frank recently assisted Al Libbey over the rough spots in becoming a benedict about a month and a half ago.



1926 Continued

Jean Chaudric reports having seen Dick Pough in New York City recently. Dick is Secretary of MacCallum, Inc., Sound Engineers, of Philadelphia. Jean has been in the engineering department of the R.C.A. Photophone about two and a half years and at present is doing quite a little traveling in lining up dealers and helping them with their particular problems. Don Bloomberg is a recording engineer with the same company and has only recently returned from Australia after having spent a year in England. About 15 months ago, while in England, he married an English girl. Jean married Miss Dorothea Berta Kindler of New York City in 1929.

Bob Richmond is with the Brooklyn Union Gas Company of New York City, while Johnnie Diegnan is on the teaching staff of Lafayette College at Easton, Pa., and Chuch Smith is with General Electric at Bridgeport, Conn.

Count Colt informs me that he decided to stop the depression late in 1929 by spending more than he earned and as a result is nearly bankrupt now. Anyway he has two youngsters, Count, Junior, and Nancy, the latter having made her appearance only a few months ago. Mrs. Colt was the former Miss Josephine Jewell of Boston. At present Count is a customers' man for Hornblower and Weeks. As formerly reported, Jim Drain was recently married. Count informs me that John Drum is still laid up in Detroit as a result. He also tells me that George Faithful is trying awfully hard to be a lawyer, and that Bill Sessions is at the Harvard Business School, while Henry Rickard is making shoes, and Ralph Head is still making shirts.

An announcement of the marriage of Don Cunningham to Miss Dorothy Isabel Pratt in Boston was recently received. More power to you, Don! — The writer himself deserted the ranks of bachelordom on September 26 when he was married to Miss Collette Jeanne Radlebeck of Peoria, Ill. Since January, 1929, he has been connected with Sears, Roebuck and Company, having spent about four or five months in their Cleveland Retail Stores and since that time has been in their General Merchandise Office in Chicago. At the present time, he is in charge of the Control of Inventories in their retail stores and is making his home in Oak Park, a suburb adjacent to Chicago. Whenever out this way be sure and let me know so we can have a get-together.

If the remaining 80% aren't completely under the sod, I would like to hear from them. If necessary, paper, pen and ink as well as postage will be forwarded on request. — THORNTON W. OWEN, *Secretary*, 940 Pleasant Street, Oak Park, Ill.

## 1927

The February Review has not appeared as these notes become due, so that the appeal for information and help contained therein has brought no return. Thanks principally to the clipping service sponsored by The Review Editors, we are able to pass on a few bits.

New York and Lexington, Ky., papers carry the news of the marriage of William M. Crane, Jr., to Miss Mildred Barbour at Richmond, Mass., on October 24. They are at home at 222 East 82nd Street, New York, where Crane is an architectural engineer for the Copper and Brass Research Association. — The next item concerns Charles Kingsley, Jr., whose engagement to Miss Rebecca Sears of Boston was announced early in December. He is an instructor in the Electrical Engineering Department at the Institute.

The *Silver and Gold*, presumably an undergraduate newspaper from a (also presumably) co-educational college at Boulder, Colo., recounts the many marriages of Alumni since the last reunion. Among them is that of Miss Rita McLeod to Howard Lary, which took place at the Central Presbyterian Church of Denver, on June 24. — Miss Clarissa Dyer was married at West Brighton, Staten Island, to Noel Flint on September 23. They are to make their home in Chicago. — Announcement was made on September 19 of the engagement of Miss Marjory Duthie of Newton Centre to Ralph Stober.

John A. Herlihy, for the past year a pilot in the Newark to Cleveland mail service of National Air Transport, was married in Plainfield, N. J., to Mrs. Helen Watson Nelson, on September 20. The Herlihy's are living in Cranford, N. J. — Two more wedding announcements are at hand, the first of which I overlooked in my file and forgot to include with the notes in The February Review. This was one sent out from Akron, Ohio, by the parents of Miss Helen Elizabeth Cockrell, who was married to Larry Coffin in Hurlingham, Argentina, on August 1. Larry was working for Goodyear at Akron and it was that company who sent him south. — The other announcement concerns Wes Meytrott, who was married to Miss Inez Campbell on Thanksgiving Day in Atlanta. They are at home at Hotel Wagner, Sidney, Ohio.

A clipping covering almost a full page and containing three photographs was taken from the Hartford *Courant* last summer. It describes at some length the more thrilling experiences of Lt. Lewis A. MacClain, chief test pilot for Pratt and Whitney. MacClain spent two years at the Institute and was graduated with an S.M. for work in aeronautical engineering. Test piloting sounds as though it had its hazards. Even Pratt and Whitney motors can't all be good. But MacClain is air-minded and boasts that his wife is also.

Later this week, much too late for a report in this issue, I am going down to New York where I hope to have a moment with Jim Lyles. Jim has set the kettle simmering on plans for our Five-Year Reunion and while he has nothing definite in mind at this early date, he is anxious to have suggestions. We have enough money in the Class Treasury to insure an effective beginning, enough to get us started without asking for contributions or levying class dues until later on. With some of us out of jobs and others of us with severely curtailed incomes, we realize that a reunion must be planned

which will make possible participation by the greatest number at the lowest cost. Those forwarding suggestions should keep this in mind, both as to the geography and the tariff involved.

To keep down the needless expense of sending out follow-up requests, please help the exchequer all you can by responding promptly to any questionnaires we find it necessary to send you. — JOHN D. CRAWFORD, *General Secretary*, P. O. Box 89, Wayland, Mass.

## 1928

Once again our contribution of class news consists primarily of marriages of '28 men to date not announced in this column. On September 11, Chuck Worthen, VI, was married to Miss Velma Woodman in Bradford, Mass. Chuck is still located in Cambridge, working with General Radio. — Ernest M. Schneider, on November 21, was married to Marjorie Ruth Bowlby of West Somerville, Mass. Schneider is employed as a research chemist for the Ludlow Manufacturing Association of Springfield.

Jimmie Kay, VI, writes that he has left Westinghouse Electric and is now located with the Continental Electric Company of Newark, N. J., "doing the same type of work as with Westinghouse." Jim is now living at 122 Newark Avenue, Bloomfield, N. J.

Tubby Grover has now joined the ever-increasing ranks of '28 fathers. Tubby's youngster is a daughter, Jean Barton Grover, born on November 17. Congratulations, Tubby!

It is with regret that your Secretary announces the death of Richard W. Holmes, IX. At the time of his death, Dick was enrolled at the Coast Artillery School at Fort Monroe, Va. Here at Technology, Dick was very active in the Scabbard and Blade and Mortar and Ball Societies. To Dick's relatives, the Class wishes to extend its sympathy.

Anyone know the correct addresses of the following from whom mail has been returned: Daniel J. Behar, Huban Sokak 28, Bakirkoy, Stamboul, Turkey; Ward J. Bloomer, Commercial Solvents Corp., Terre Haute, Ind.; Shih C. Chen, c/o Miss Mildred Meyer, 415 W. 115th Street, New York City; Robert E. Hodgdon, Rm. 4-136, M. I. T., Cambridge, Mass.; John G. Houppis, 175 Pinehurst Avenue, New York City; Ardavast K. Missirlian, 3210 Arthington Street, Chicago, Ill.; Alva Pearsall, 23 W. Milton Street, Freeport, N. Y.; Charles W. Ricker, Jr., Allerton Club Residence, 1802 E. 13th Street, Cleveland, Ohio; Gerald J. Sullivan, Fort William McKinley, Rizal, P. I.; Edward J. Wood, 151 Collidge Avenue, Syracuse, N. Y.; Dr. Lu C. Wu, 231 Harvard Street, Apt. 3, Cambridge, Mass.? — GEORGE I. CHATFIELD, *General Secretary*, 420 Memorial Drive, Cambridge, Mass.

## COURSE I

It has been possible recently to begin each set of notes with news of a wedding. This time congratulations are in order to Kent Hough. He and Miss Marjorie Mary Ready were married in Skowhegan,

1928 Continued

Maine, on December 28, and are now living at 221 Grove Street, Auburndale, Mass. Continue to address mail to Benny at 10 Monmouth Ct., Brookline. On the professional side, Hough is at the Institute studying for his Master's degree and it is my understanding that he intends to remain there next year as an assistant to one of the professors.

Hal received a letter from Hammond recently, which indicates that Bill is still with the supervisory force of the Penn R. R. and on duty practically continuously. His address is now 7 Tonnebe Avenue, Jersey City, N. J.

I am going to take this opportunity to thank you fellows for your Christmas cards. It was from this source that we learned that Jones is at 318 Louisiana Avenue, Chester, W. Va. We hope that he will send us a letter with slightly more detailed news. And while making these personal appeals, Porter or I should like very much to hear from Bob Harbeck who, we believe, is living in Milwaukee.

Art Josephs is sailing for Europe early in February and plans to study over there for a year or so — probably in Vienna. Bob Cook, who has been keeping Art and Hough company up at the Institute, was in town at Christmas time and expects to complete the year in Cambridge. — GEORGE P. PALO, *Secretary*, 426 East 238th Street, New York, N. Y.

## 1929

Bob Riley, XVI, after graduating from Kelly Field in June, 1930, and now employed as an experimental engineer for Pratt and Whitney Aircraft Company, was married on October 17 to Miss Katherine Wethered Lilly of Baltimore. They will live at 19 Robin Road, West Hartford, Conn. — Eric Bianchi, II, was married October 10 to Miss Edith Katherine Denison of Winchester.

Marshall David, II, was married October 3 to Miss Dorothy Paine of Newtonville. They will live in Cambridge at 3 Crawford Street. Marshall is working for the Boston Consolidated Gas Company. — Jack Emery, II, was married November 7 to Miss Francis Virginia Rockwood of New York. I am sure that the Class admires the courage of our mates to take on these responsibilities in times like these. We join in congratulating them and in wishing them many, many years of happiness.

Olaf Pierson, VI, rates the admiration and congratulations of all of us for he is now a member of the Caterpillar Club, a club of fliers who have saved their lives by means of parachutes in forced landings. He's a reserve pilot and an instructor in the East Boston Airport Ground School and was flying over Winthrop when his plane was demolished in a slow tailspin into the water. He landed in the water and swam ashore, receiving only a slight bruise on his shoulder when jerked upward by the strap of his parachute.

Anyone know the correct addresses of the following from whom mail has been returned: David Graham, C 15, Mellon Hall, Soldiers Field, Boston, Mass.; Charles R. Greene, 14 Richardson Court,

Framingham, Mass.; Fleming R. Hurt, Jr., 2 Brimer Street, Boston, Mass.; Shirley D. Johnson, 333a Harvard Street, Cambridge, Mass.; Alexander A. Nikolsky, U. S. Rubber Company, 561 W. 58th Street, New York City; Gerald A. O'Connor, Raymond Concrete Pile Company, 140 Cedar Street, New York City; Edwin G. Osborne, Devonshire Hall Apartment, Drexel Hill, Pa.; Benjamin Proctor, 3d, 333 W. 43d Street, New York City; Kiron C. Roy, M. I. T.; Chung F. Yee, Paisua-fong, Tatang Street, Canton, China?

Please note your Secretary's new address. — EARL W. GLEN, *General Secretary*, Box 178, Fairlawn, Ohio.

## COURSE I

After many months of silence, the Course I Secretary finally comes forth with a few bits of news which he has gathered here and there. Mr. and Mrs. Clifford Kittredge announce the birth of a boy born on October 29, in Munich, Bavaria. Cliff is still having his troubles with the German language, but it is reported that he is doing excellent work in spite of the 12-cylinder words.

Hunter Rouse returned from Europe last summer. He is now an assistant at the Institute, where he is working for a Master's degree. Next June he plans to return to Germany to get his Doctor's degree. Hunter is engaged to a girl in Germany. The ranks of the bachelors are thinning fast. — Last summer Ham Williams worked for Professor Morris in California, when the latter was making some geological investigations in one of the deserts out there. — Bill Whiting is still doing engineering inspection work for an insurance company. Bill not only beats hard times by keeping his job, but gets a raise in the bargain. — Link Reid is contemplating becoming a graduate student at the Institute.

Bill Cathcart finished up with Stone and Webster in Richmond, Va., and was last seen heading for the State of Maine. — Ted Malmstrom returned from his job in Missouri last fall. On the way home he had a serious motor car accident, which resulted in painful but not permanent injuries to himself and his companion. — Larry Newman and Miss Eleanor Jarvis were married last June. They are now living in New Haven, Conn. Larry is superintendent of pole construction for the Southern New England Telephone Company.

Anthony Perry wrote the Secretary last spring, giving an account of his activities since graduation. For the first six months after he left Technology he worked for the Massachusetts Highway Department. After that he went with the Interstate Commerce Commission, where he worked on railroad valuation problems. Nine months of that sort of work was enough, so he got a transfer to the U. S. Reclamation Service in Denver, Colo. He is now in the same office with Hap Adkins.

DeFabitris is still at the Institute, where he is an assistant in Professor Miller's heat course as well as an assistant to Professor Spannhake in his new course in advanced hydraulics. — Wes Walters

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is still with the Army Engineers in St. Paul, Minn. — Fine is also with the Army Engineers in Norfolk, Va. — GORDON R. WILLIAMS, *Secretary*, 31 Concord Avenue, Cambridge, Mass.

## COURSE VI-A

It has always been a theory of mine that even the most lazy person in existence must eventually do something, if nothing more than to think up ways to keep him from doing something. So although I probably classify as the most unsecretarial secretary on the staff of course secretaries, eventually even I must come to life.

As a matter of fact, I have maintained a reasonable amount of contact with the fellows of VI-A, but this is my first attempt to transmit the information. Since graduation two Junes ago, several VI-A men have married. Dick Wolfe was married directly after graduation. Shortly after, on Monday, July 21, 1930, Austin Fribance was married to Miss Annette Ritter. — At West Newbury, Mass., on June 29, 1931, Gordon Bowie was married to Miss Sarah Adelaide Macdonald. — Newt Bryant was next, his marriage to Miss Betty Clark taking place in Hingham, Mass., on Wednesday, July 1, 1931. — Last on my list is the marriage of Art Jones to Miss Mildred Mack. This took place in Dobbs Ferry, N. Y., in August of this year. In all, my records show eight VI-A men married, the others being George McKenna, Trik Shah, and Art Williams.

In general, the fellows are stationed in and around the large cities of the East. In New York are Gordon Bowie, Newt Bryant, Dex Osgood, Ed Perkins, Roger Sykes, and Norm Earle, all working for the Telephone Company. Harry Dickinson is located nearby in Passaic, N. J., working for the Okonite Cable Company. About 20 miles north of the city is Art Jones, working for Anaconda Wire and Cable in Hastings-on-Hudson, N. Y. — Charlie Roggi is working for the Electric Railway Journal in N. Y. C., and is holding down a job of ever-growing importance. For a check of this, see one of the early summer editions of this magazine — it tells all about him. — Last I heard, Swiffee was working on Long Island as a sound engineer in the films.

Letters from Philadelphia tell of the presence of Johnnie Joyce and Walter Key. John is working for the Philadelphia Electric Company. With his new Chevvie, he manages to get around quite a bit and to visit Boston occasionally. Walter Key is "working on da railroad." The Penn R. R. is his road and I must say that Walt's letters show that not only is the job good, but also the incidentals of the city.

Near Boston are George McKenna, George St. Arnold, and George Meyers. For some unknown reason the Georges have stuck near Boston. McKenna is with the N. E. Tel., Meyers with the G. E. in Lynn, and St. Arnold with the Boston Edison. — Our only representative near Chicago is Fribance. He's there with the Western Electric Company.



1929 Continued

Several of us are around Albany. In Pittsfield, working in the C. E. laboratories there, is Ken Beardsley. I saw him there when I was in Pittsfield a couple of weeks ago and he is enjoying his work tremendously. — Larry Moses is in Albany with the telephone company. Though he's but 15 miles from here, we've not had an opportunity to get together yet. Seems strange, but it's just unfortunately occurred that way. In Schenectady, my point of operation, is also Ed Gardner. We're rooming together and are both members of the advanced engineering course of the General Electric. Ed has been elected Secretary of the Schenectady M. I. T. Alumni Association.

Incidentally our two European tourists are included in this Albany gang. During the summer directly after graduation, both Larry and Ed took a trip abroad. Ed left directly after graduation and toured Germany, Holland, France, Switzerland, and England. Larry left from Canada somewhat later in the summer and concentrated on France. When I get hold of him, I'm going to find out why.

A letter I received from Fracassi a short time ago surprised me considerably. Renato has traveled across the country on a transcontinental line project. His letter was sent from Sacramento, and at present Renato is in Denver, Colo. He was there until Christmas.

Of the rest of the men in the Class, I've been able to learn but little. Trik Shah is, of course, in India. I have a standing agreement with Shah. When first I visit India, he's to meet me with elephants and to offer them as a means of locomotion.

This briefly sums up the present whereabouts and activities of VI-A. Now if I can get a few more letters, I'll have a little more detailed story about the fellows. This last statement is my plea for more, better, and longer letters. — SAMUEL J. LEVINE, *Secretary*, 353 Glen Avenue, Scotia, N. Y.

## COURSE X

It is my sad duty to record the death of Webster Leroy Mackusick on September 22, 1931. Mac had been employed by the Standard Oil Company of Indiana since he received his S.M. degree. He was stricken with a heart attack while stopping in Akron, Ohio, on his way back to Winthrop, Mass. Mac was graduated from Winthrop High School '25 and received his S.B. in '29 and his S.M. in '30 from the Institute. Mac was the only son of Mr. and Mrs. Arthur L. Mackusick of Winthrop and I wish to express the sympathy of all of us who knew Mac through four years at Technology and even more intimately during the year of the practice school.

Ken Martin tells us that his activities with the Illinois Zinc Company were of relatively short duration and that he is now giving the Brooks Banknote Company of Springfield, Mass., the benefit of Course X. Although he is a former roommate, his only news of Andy was of his marriage followed by the comment, "I can sympathize, exult, or what have you

with him as I was married myself in July." I might add that a card from Glenn attests to his existence. His handwriting is still excellent but more of it is necessary; I have not Mr. Lucas' ability as a graphologist. I can foretell neither present, past, nor future from such a sample. The same difficulty exists with Johnnie Happel.

Dick Oppen crashes through with the information that he is enjoying work with the U. S. Rubber Company, Passaic, N. J., in spite of the fact that he along with the President and the rest of the officers now have an opportunity to enjoy Saturday mornings as they see fit. As former leader of the Chem Society, he suggests the following: book to be ruffled, "How to Get Ahead During a Business Depression," by Mr. Unemployed; entertainment and refreshment; a glass of cider made in God's country (Somerville, Mass.); and the radio with Singing Sam the Barbasol Man (no brush, no lather, no rub in). The treasury is M. T.

Mike Altieri is working for the U. S. Rubber Company at Providence as a foreman of some enormous department. Not long ago he purchased a brand new Plymouth, floating power, Chrysler product. That sounds rather encouraging. — Art Scott is reported to be one of the biggest chemical engineers in the Alco Products Company in New York. He deals with heat exchangers, evaporators, and other marvels of the scientific age. He and Dick Oppen have occasionally honored each other with visits. Art isn't engaged, yet, or wasn't when the reporter made his rounds.

Al Hayes was able to make a dashing trip home at Christmas time. Lack of time and snow caused him to park his car in Buffalo and go on by train. — Honest John Trahey made a similar dashing trip to Cambridge. — Bob Loomis stopped a short time here in Rochester on the trip to Westfield. — Jim Hogan has been the assistant at the Winchester station of the chem engineering practice school. He says "the group are running a test on the Muriatic absorption system, at Merrimac, and I have to stick around for the sake of appearances." Has the practice school come to such a pass? — Jeff McGrath is assistant superintendent of the contact plant at Merrimac. This is a new unit and Mac was right in on the design of the equipment. — LAWRENCE T. TUFTS, *Secretary*, 178 Alameda Street, Rochester, N. Y.

## 1930

## COURSE I

After prayerfully sending out some 40 odd letters, I had hoped at least to hear from Jim Muir and Art England, who write more regularly than anyone else in the Class. Imagine my embarrassment when the mail man gave me no less than 11 replies and seven originals returned unopened for lack of correct address. Let us, therefore, get to the news of the month.

Joe Twinem, as you probably know, has made good in a big way. Joe is now state geologist and member of the faculty

at the University of Maine. He says in part: "Haven't been doing much lately except answer a lot of questions about where to find gold in this here state. Spent last summer down in Kentucky working on a structural geology problem in the Shinbone Cliff region, with respect to locating an oil dome. Had fair success, but am still working up my data. Am teaching school, as you no doubt know, at the U. of M. Wyman Boynton '31 and I were discussing old times when your letter came. He spent the last week-end here with me. We traveled about the state inspecting and looking over some of the hydro developments up here." Joe's address is: Geological Survey, Orono, Maine.

Bill Locklin writes from Albany: "My work hasn't changed much lately. I am foreman of a line gang and have been boarding at a country hotel for two months. We are completely rebuilding the telephone plant in West Berne. The N. Y. Tel. Company bought out the old West Berne Company, and their poles and wires were not even worth salvaging. There must be at least 100 miles of line in that small town. I came back to Albany yesterday for a two weeks' foremen's conference. It is going to be hard to go back to the cold outdoors again. I expect to be a foreman until spring, when I'll probably go back to the student engineer classification for a few months in the plant engineer's office. I am enjoying myself, anyway. I went home to New Hampshire November 1 for a week in the woods. I only fired two shots, but I got a deer and a hedgehog and came home happy." Drop Bill a line at 260 Partridge Street, Albany, N. Y.

Orm Lissak wrote me from Cambridge where he has been since graduation. He is with Warren Brothers Company as resident inspector, job superintendent and at one time was in charge of some research work. He speaks for himself: "I am now back in the office for this winter and am already itching to get out on a job again. Have eaten more lunches in Walker Memorial since graduation than I did in five years at Technology, it being the only place other than the Waldorf at Kendall Square within walking distance of Warren Brothers — the irony of fate!" Letters will reach Orm at 41 Bowdoin Street, Cambridge, Mass.

Bob Gardner pens a sympathetic note from Haverhill. He says: "It must be hell to be course sec with a bunch of Dodos what forgot to write just as soon as they signed their last faculty petition — now isn't it? I have been in a fog as to just what class I should tag along with. The shipskin says '31, and I flung eggs with '30 when a riot was a riot and Technology was Hell. Guess I'll be an also-ran of '30 and stay with a good bunch. (Two bits, please.) As for me (budding young civil eng.) I haven't done a civil thing since I last graced the platform of Symphony Hall. Spent a good summer up in New Hampshire taking some good canoe trips, and building extra large dog houses for people to sleep in. Nearly failed up on my designs because I had left my slipstick



1930 Continued

home, and couldn't get the square root of 40.005 without it, and so on. Took Massachusetts Civil Service Exams a week ago. Not too hard. A bunch taking it. Several '30, I's. All of Northeastern taking it, too." Bob will be found at 82 Fountain Street, Haverhill, Mass.

Jim Muir sends news from Columbus, Ohio: "Just a line to let you know that I am now sales engineer in the State of Ohio for Colas Roads, Inc., a subsidiary of the Royal Dutch Shell Company. I have been traveling for this concern since April 1, 1931, throughout the states of Ohio, Indiana, Kentucky, West Virginia, and Michigan. On December first my mother left Boston to join me here. I am now confining my sales efforts solely to the State of Ohio where an ever-increasing quantity of asphalt emulsion is being used by the highway authorities and others." That's what I would call news. If you have any for Jim, send it to 1682 Glenn Avenue, Columbus, Ohio.

Art England is still in New Haven and sent me Christmas greetings which I pass on to you all. (Further news from him appears below.) Pete Kalleis also sent Season's greetings from Boonton, N. J.

Chuck Habley has taken the fatal step. An announcement from Berwyn, Ill., tells us that Harriet Julia Church and he were united December 24. We all offer them heartiest congratulations and best wishes for a happy hundred years together. Chuck's new address is 1426 Austin Boulevard, Cicero, Ill.

Bud Newsom is in Daytona Beach, Fla. He wants us to know that: "I am located in Tampa with the U. S. Engineers, but have been transferred over here for a few months to help out with the work on the Intra-Coastal Canal from Jacksonville to Miami. I do a lot of outdoor work and, incidentally, the swimming is fine, to say nothing of the golf and fishing." He ends his note in sudden fear that I will think that he is trying to sell me a lot down there. He hopes that I am as cold as hell out here in Oregon, and says I should be more particular and do my winter engineering in Florida. Bud's address is: U. S. Engineer's Office, Tampa, Fla.

Art England is still drawing on the treasury of the State of Connecticut. He gives us the following dope: "I can furnish you with a little news, but not of myself. Yours truly has not yet joined the fast diminishing (?) army of the unemployed. I attended a meeting of the Connecticut Section of the American Society of Civil Engineers last evening, the third in a little over a year. Quite a record, what? Here's all the news that I have gathered from the few letters which I have received since I wrote last. None of it is guaranteed to be correct, for it is dated far back. Ced Roberts is in Cleveland with the Erie R. R. His engagement was announced last June. — Les Engler is in Schenectady. — Mendall Thomas is Professor Camp's assistant at the Institute. — Ray Rollin is there for Barrows. — Jack Vennard is studying for his M.S. at the Institute, having left Akron. — Hank Halberg is working in Bristol for Professor Barrows." Art wants

to hear from you birds, and will be watching for the postman at 79 Lake Place, New Haven, Conn.

Seven letters came back with incorrect addresses. I should say obsolete, rather than incorrect, for they were correct at one time. They were addressed to Bob Barrett, Harry Beohner, Johnny Byrne, Chew, Bill Eaton, Ced Roberts, and Les Senior. Of course these boys did not receive my wretched appeal. But the rest of you did. Must I say more? I will, but not along that line.

I am still out here in Oregon, working as a junior engineer on a hydro-electric construction job for the California Oregon Power Company, a subsidiary of the Standard Gas and Electric system. The work has been very interesting and my small brain has grown considerably (if that means anything) on a diet of field and office work. The company has constructed about seven miles of canals and flumes, together with pipe lines, to carry water to the Prospect No. 2 hydro plant, at present the largest in the state. A small plant which is now rapidly taking shape utilizes a portion of the new extra diversion before it is sent to the main plant. (I suppose my position is unusual inasmuch as I am actually engaged in the work which we studied in Option 3. Do all of you sell bonds?) The work will be finished here shortly. My destination when I leave is yet unknown; however, letters and post cards will always reach me if sent to my Chicago address.

Now that the column has found new life, let's try to keep it going. It's a shame that each article must end with this rubber-stamp plea, but if you don't write, I can't! — RICHARD N. CHINDBLOM, *Secretary*, 5418 North Paulina Street, Chicago, Ill.

#### COURSE VII

My dears of Course VII, draw up a chair. Many a Carolina moon has Morton Downeyed since your correspondent last heard from you, or has ever, but if news is not forthcoming soon, we shall be forced to delve into that thesaurus of Course VII antiquity and expose your alumnical procrastinations à la Walter Winchell.

We know that you will not believe this. Morrie Shaffer actually did write this department a 15-page letter, the first 14 pages of which consisted of assorted alibibic albinoic lies explaining why he did not write sooner. On page 15, he wishes all of VII a happy and prosperous new year and also sends along his regards. As newspaper training has taught us to disregard material written on both sides of the paper, we were obliged to relegate M. F.'s thesis to the basket, but we did notice that his address is Oriel College, Oxford, England. Be sure that you write Oriel and not Oriole. Incidentally, our good friend Henry Gillen of the Boston *Post* did a Sunday feature for Shaffer about three months ago. It was reprinted all over the states.

Dave Stanley, that plectrum player from Punjab, recently delivered a talk at the Montreal Apha Convention, and

white-aproned Dick Foster sent us a cable collect saying that Dave's Canadian visit would last two months. — Rotund chief "first name on the list" Larry Abare is still ploughing clams at the Cape, and his side kick Cecil, he of the Sericeous flowing locks is labbing at the school. — Tauto for Arthur Heifetz of Newburyport, Revere and Portland, Va. Arthur is also teaching P.H.L. methods. — Barney Cantor, the laboratory lupine, is still at Tufts, and Milt Mexoff is writing his 1930 thesis. He will graduate soon.

Now soft music and langhissimo. Your Secretary is ghosting for a well-known news column, but in a few months we expect to have a lot of pertinent news for you concerning "restaurants" and until then, we cannot say much more. Contrary to public opinion it will please our Course to know that Dave Stanley has forsaken the Cardinals. — SIDNEY L. KUPOSKY, *Secretary*, 38 Charlotte Street, Dorchester, Mass.

#### COURSE XV

Course XV started the New Year in a blaze of glory. The meeting held for the graduates in the North Hall on January 2, 1932, was attended by more than 200. Learned papers were presented by august members of our Faculty, and experience-tempered graduates took great delight in reversing undergraduate tables during the question period. The details will probably be given in this number of *The Review*. A goodly number of '30 men were present. Unfortunately, because of that inevitable engagement, I had to leave early and was not able to get a line on all who were there.

Bob Poisson journeyed up from the wilderness of New Bedford and commented favorably on Professor Elder's remarks on merchandising. Bob is now with his father supplying New Bedfordites clothing the well-dressed man will wear. Eclipsing even his feats of salesmanship is the fact that with the aid of well-placed mechanical improvements he has pushed his Ford roadster up to 85 miles per hour. On his own authority Chet Turner is sales manager for the H. E. Wright Company, purveyors of milk cans and automatic slot machines. "The Gumps" latest adventure into realms of intellectual activity was the design of an automatic ice cream vendor. The stumbling block was an uncertainty in delivering the desired flavor. Probably an order for a chocolate marshmallow sundae would have wrecked the machine.

Charlie Edlund, looking very erudite behind a closely cropped moustache and big black pipe, announced that he was teaching at the Lowell Textile Institution. His subjects, covering a wide range, include Calculus and Textile Marketing. — Ed Kingsley is working with John H. Pray, rug merchants, in Boston. Ed refused to give an official title to his job.

Harry Von Urff has turned somewhat aside from the field of engineering achievement. He is designing modernistic furniture. Harry tried to sell me his leader. For the downright drastic bargain price of \$300, he will supply a bar fully

1930 Continued

equipped with brass rail and ground glass top and designed to meet the needs of the customer's home (adv.). His business will run into a real depression if the Eighteenth Amendment is repealed.

Jim Deery has left the American Aluminum Company and is now working for the Link Belt Company. — Al Prescott, whose marriage about a year ago was heralded in Boston's society columns, is now selling General Electric Heat Controllers.

Word was brought that Tom Hickey is in the Patent Office and is studying law at George Washington University. — John Acheuren is doing time study, estimating for a contractor, in Ashland, Mass. — Paul Gill is at the Harvard Business School. — Ed Mears and Leonard Goodhue are with Dewey and Almy in Cambridge, Mass. — Tom Wigglesworth is selling machinists tools and supplies in a district around Boston.

About six months ago, I ran into Lee Thorsen, accompanied by his usual cigar. Lee is running his own company which is located just outside Boston. He manufactures heating, plumbing, and sheet metal supplies. When I saw him he was under contract with M. I. T. for some work in the new dormitories and he quoted some sales figures which left me weakly gasping. A great deal of his work has been with water power installations.

Dave Wells is holding down a responsible position in his father's business. They supply ice to refrigerator cars along the Atlantic sea coast. — George Shrigley, who was formerly with the American Woolen Company, is now working on production and stock control for the Warren Telechron Company in Ashland, Mass.

When last heard from, Chick Dolben was doing marketing work for the Congoleum Company in Kearney, N. J. — I saw Olly Green about three months ago in the Course XV Lounging Room, which, by the way, has been revamped with a new set of offices. Olly was still with the General Electric Company in Schenectady as a student engineer on their factory training course.

Many a course secretary in appealing for news has emphasized that facts are necessary and imagination cannot be used. I refuse to be bound by such limitations. Every tale I hear is going to be stretched to the limits of probability, so your only protection against future libel is to write me the truth yourselves. — ROBERT W. REYNOLDS, *Secretary*, 14 Chancey Court, Lynn, Mass.

### New Haven County Technology Club

A meeting of the Club was held on Friday, December 18, at which the following officers were elected: S. M. Boyd '18, President; C. E. Smith '00, Vice-President; M. S. Wellington '16, Secretary; W. T. Jones '11, Treasurer; R. L. Parsell '14, Member of the Governing Board at Large. — MARSHALL S. WELLINGTON, '16, *Secretary*, 60 Holcomb Street, West Haven, Conn.

### Washington Society of the M. I. T.

The second regular luncheon meeting of the Society was held on Friday, November 20, at 12:45 p. m. at the University Club and we were pleased to entertain, in addition to the speaker, Mrs. W. Malcolm Corse and R. W. Hambrooke of this city.

The speaker of the occasion, Dr. Victor S. Clark, consultant in economics at the Library of Congress, gave a very interesting description of his recent travels across the continent of Africa, which were conducted largely by plane.

At the close of his address the meeting was thrown open for questions, which ranged from the effect of the depression on South Africa to flood control of the Nile and swamp reclamation and transportation throughout the gold, diamond, and coffee regions of Central Africa.

Among those attending the luncheon were: W. E. Lutz '17, Allen Pope '07, E. D. Merrill '09, A. E. Hanson '14, W. I. Swanton '93, R. T. Hall '19, P. R. Cornell '12, H. M. Phillips '92, F. G. Wells '22, H. W. Tyler '84, A. B. McDaniel '01, P. L. Dougherty '97, W. M. Corse '99, F. H. Newell '85, F. Cushman '01, J. Y. Houghton '26.

On December 29 the Society entertained as its guests at the University Club 18 undergraduates from the Institute. The meeting was held at 12:45 p.m. and following the usual luncheon, Vice-President Henry C. Morris took the chair in the absence of our President, the nominating committee made its report, and the following officers were elected for the ensuing year by unanimous vote: Harry W. Tyler '84, President; E. D. Merrill '09, Vice-President; J. Y. Houghton '26, Secretary; C. H. Godbold '98, Treasurer.

The Chairman then announced that the Annual Dinner and Ladies' Night for the Society would be held on January 18 at the Lafayette Hotel, that the "Four Horsemen" from the Institute would speak, and that the speaking would be followed by dancing until 12 o'clock.

The following committees were appointed: Entertainment Committee — W. M. Corse '99, Chairman; A. M. Holcombe '04, H. C. Morris '00; Decorations Committee — Miss Katherine Buckingham, Chairman, Mrs. H. W. Tyler, Miss Jane Bartlett, Mrs. P. V. Dodge.

The chairman then announced the impending publication, under the editorship of F. H. Newell, of a special *de luxe* founders' edition of "The Planning and Building of Washington," under the auspices of the Washington Society of Engineers and the George Washington Bicentennial Commission, after which the several winners of the Regional Scholarship present, Arthur Leonard Conn, Jesse R. Henshaw, and Leonard Stern Wiener, were commended upon the records so far made by them at the Institute and the entire assembly formally introduced themselves.

The speaker, Dr. Cloyd Heck Marvin, President of George Washington University, told of his experiences as an honorary participant in the preparation for and

enactment of the Hopi Indian Snake Dance in the villages of the Walpi and Oriabi Mesas, Ariz. The intimate account of the execution and significance of the dance was extremely interesting and greatly enjoyed by all present. The guests at this meeting included: Henry B. Backentoss, Winton Brown, John G. Brunner, Edgar B. Chiswell, Arthur L. Conn, Edward Croft, Jr., Edward K. Dougherty, Jesse R. Henshaw, Howard A. Kinzer, Theodore M. Lichtgarn, Herbert J. Lidoff, Edmund H. Lloyd, Samuel G. Nordlinger, Norman S. Pressler, Richard H. Sanders, Gordon L. Way, Leonard S. Wiener, and the attendance included the following members: A. E. Hansen '14, W. E. Parker '99, Katherine Buckingham '27, E. D. Merrill '09, F. W. Swanton '90, W. J. Swanton '93, A. M. Holcombe '04, P. L. Dougherty '09, A. B. McDaniel '01, Mrs. P. V. Dodge, Allan Pope '07, H. C. Morris '00, K. P. Armstrong '10, F. H. Newell '85, Frank L. Ahern '14, J. Y. Houghton '26.

In lieu of the regular luncheon meeting in January, the Society held its Annual Banquet and Ladies' Night, as scheduled at the meeting first described. Following the dinner, Dr. Tyler introduced the speakers, pointing out that under the new rating system designed by the Registrar [considering the pertinent letters, H, C, P, L, F, R, and O (F.F.) of their names] none of the speakers summed up to an honor grade, and allowances should be made accordingly.

Dean Lobdell spoke first as "authority of student affairs" and held the unfailing attention of his audience with memories of Jacob Worth's, the Georgian, Gravel Courts, Tech Night, and so on, with which he contrasted present conditions, including traffic problems, student activities, radio and motion picture substitution for the "Show" and "Musical Clubs Barnstorming Parties."

Registrar MacKinnon, purveyor of statistics, next took issue with Dr. Tyler's joking reference to the new rating system, pointed out its workings and intent, and made many of those present glad that they "got through" before bouncing became an exact (?) science.

The talk by Bursar Ford, as any talk on successful finances in a period of depression, was accorded as much attention as if its subject were black magic. One listener commented that, between the two of them, the Bursar and Registrar were doing a remarkable piece of work, bouncing exactly the right number of men to offset the loss of income from endowments, increasing salaries while reducing operating expenses at the Institute, maintaining better investment returns than John Harvard, and insuring bigger and better, if fewer, graduates, while preventing non-beneficiaries of the system from spending third and fourth year tuition.

The final speaker of the evening, Chairman Leicester F. Hamilton '14 of the Dormitory Board, told us many things we wished to know, confirmed our suspicions that there must have been a substitute for Tech Night (and one to leave



behind it memories just as heartfelt and secure), and surprised us with the statement that the Institute has all the "dorms" it wants right now, and houses nearly a quarter of the student body, as large a number as fraternities.

Following an expression of appreciation for the presence of Mrs. Talbot, who came from Baltimore to attend, the room was cleared and the remainder of the evening given over to dancing. Among those present, excluding guests, were: Nathan Howitt, H. W. Tyler, W. M. Corse, Kenneth Armstrong '10, W. Clark Dean, H. C. Morris '00, F. W. Swanton '90, A. M. Holcombe, George H. Shaw, P. L. Dougherty '09, H. L. Robb, D. W. Weeks, E. D. Merrill '09, S. W. Southworth, J. Y. Houghton, George A. Ricker '86, Mr. and Mrs. Parker Dodge, A. W. Higgins, W. Lorrain Cook, H. M. Phillips, Robert Weeks, Stuart Barnett, Miss Katherine Buckingham, Miss Jane Bartlett, C. H. Stratton, George Field, A. E. Hanson, R. E. Tarbett, W. I. Swanton. — JOSEPH Y. HOUGHTON '26, *Secretary*, 402 Shepherd Street, Chevy Chase, Md.

### *The M. I. T. Club of Western Pennsylvania*

On December 14 the Club held its first monthly dinner meeting of the season at the University Club, Pittsburgh. The guest speaker of the evening was Col. G. A. Burrell, who presented an unusual address on "Russian Experiences." Colonel Burrell recently completed a year and a half in Russia as consulting engineer to the Russian Government on problems of petroleum production. He is well known to many M. I. T. men because of his war-time experience as an executive officer in the U. S. Chemical Warfare Division.

Colonel Burrell's address, which dealt with the economic, political, and social life of Russia, emphasized the experimental nature of the entire Russian structure, pointing out that any evaluation of the success of the experiment was difficult because there existed no similar civili-

zation to use as a criterion. Colonel Burrell discussed the "National Economic Policy" and the "Five-Year Plan" according to divisions of industry, and stated that while the Russians were seriously behind schedule in some important industries, yet they were far ahead in others, including the production of oil. He said that the industrial policy has been primarily the creation of large plant capacity, the building of which has meant depriving the people in general of everything save the bare necessities of living. The exportation of large quantities of goods to raise money for plant construction has resulted in a most serious lack of manufactured products for home consumption.

In their industrial and social life, Colonel Burrell stated, the Russians have given equal status to men and women. The economic equality of women, however, has changed entirely the status of marriage and the family. Both marriage and divorce are extremely easy, requiring simply official registration. Religion is on the wane in Russia, having been largely replaced as a social and moral force by the preaching of the Communist ideals, while the Church has been replaced by workmen's clubs, theaters, and schools. In concluding his address, Colonel Burrell described the newly emancipated and bewildered peasant as the great unknown force in Russia, and the one upon which the future of the Russian Experiment depends.

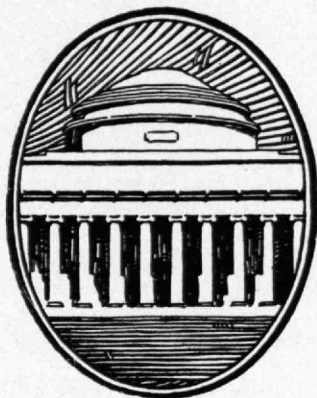
Next to Colonel Burrell's interesting address, the sparkling event of the evening was an impromptu speech by the genial "Rufe" Zimmerman '11. Responding to a toast by the convivial and no less genial Howard "Ambie" Dexter '23, Mr. Zimmerman regretted that he would soon be leaving the environs of Pittsburgh, even though he was being lured away by the paradise of sun-kissed blandishments, California. As former President of the Club, and even as an ordinary fellow alumnus, Mr. Zimmerman's efforts and his personality have won him the affection and regard of all of

us. As he was the wit of every alumni gathering in Pittsburgh and most untiring where the interests of Technology were concerned, his departure causes us much dismay, even though we know that he goes to San Francisco to become President of the Columbia Steel Co. "Frosty" Harmon and the other California alumni are to be congratulated on their newest associate.

As if the news of "Rufe's" going were not sufficient, we have been doubly disturbed by the announced departure of "Mollie" Scharff, or, as we refer to him on formal occasions, Maurice R. Scharff '09, Term Member of the Corporation. Also one of the outstanding Presidents of the Club, his splendid record with us dates back to almost legendary antiquity. As chief engineer of Main and Company, Mr. Scharff goes to the New York Division of the firm this month. His going deprives the club of the ablest guidance and counsel it has known. By the young men who look with awe upon his dignified engineering and civic record, and by the old timers to whom he is affectionately "Mollie," Mr. Scharff's leaving will be keenly felt.

The most astounding news from the confluence of the Allegheny and Monongahela Rivers, however, is that the Club's Perennial Bachelor, George W. Ousler '16, has not only ceased to be perennial, but will, at no distant date, cease to be a bachelor. The news of George's engagement shatters one of the great traditions of the Pittsburgh Club, a tradition almost as firmly established as that of the Technology Beaver. Be that as it may, the engagement of Miss Claire Erny to Mr. George W. Ousler was announced on January 16 by Mr. and Mrs. John F. Erny of this city. George, who is General Sales Manager of the Philadelphia Company, Pittsburgh, has also found time in the past to be President of the M. I. T. Club. It is to be hoped that domesticity will not remove him from the Club's haunts. — SAMUEL J. HELFMAN '24, *Secretary*, Duquesne Light Company, Pittsburgh, Pa.





# INFORMATION

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